Wonders of the Earth

This fascinating book, containing informative and readable writing in geology by experts in the field, takes you on a thrilling exploration into the core of the earth, its mountains, lakes, oceans, and atmosphere and tells you the astonishing facts about the earth's physical past, present composition, and likely future in the universe.

Here is an authoritative presentation of the most important theories concerning the birth of the earth and a clear explanation of how scientists determine its age, size, shape, internal structure, axial revolution and movement in the solar system. You will discover how glaciers, seas, deserts and mountains form, what makes volcanoes erupt and produce mineral deposits, how hurricanes and earthquakes unleash their fury.

Looking back through the ages, this treasury of geological information describes the spectacular variety of strange creatures that once lived on a very different earth. Peering into the future, it presents a startling forecast of how our planet will be hundreds of thousands of years from now.

The wonders of our terrestrial habitat come thrillingly alive in this unusual book. Compiled by Samuel Rapport and Helen Wright, who have collaborated on such books as *A Treasury of Science*, and *Great Adventures in Medicine*, *The Crust of the Earth* gives you the full facts about our fabulous world.

Other SIGNET KEY and MENTOR Books

Biography of the Earth (revised) *by George Gamow*

A simply written and authoritative story of the planet Earth, its past, present and future, profusely illustrated. (#MD138—50¢)

How to Know the Minerals and Rocks *by Richard M. Pearl*

A basic field guide with pictures, many in full color, and information on all of the most important rocks and minerals. (#KD346—50¢)

The Sea Around Us *by Rachel L. Carson*

An outstanding bestseller and National Book Award winner, the enthralling life history of the ocean, its hidden lands and strange creatures (#M100—35¢)

The Edge of the Sea *by Rachel L. Carson*

The world of teeming life where the sea meets the land, beautifully described by the author of *The Sea Around Us*. Illustrations by Bob Hines. (#MD242—50¢)

The Crust of the Earth

An Introduction to Geology

Edited by SAMUEL RAPPORT *and* HELEN WRIGHT



A MENTOR BOOK

Published by THE NEW AMERICAN LIBRARY

FIRST PRINTING, SEPTEMBER, 1955
SECOND PRINTING, MARCH, 1959

ACKNOWLEDGMENTS AND COPYRIGHT NOTICES
(The page following constitutes an extension of this copyright page.)

"Geology, the Easy Science" and "The Record of Living Things" by William O. Hotchkiss, from *The Story of a Billion Years*, Copyright 1932 by The Williams & Wilkins Company, reprinted by permission of Nancy Hotchkiss Boschen.

"Second Rate Planet" and "Rocks and Minerals" by Carey Croneis and William C. Krumbein from *Down to Earth*, Copyright 1936 by The University of Chicago, published by The University of Chicago Press and reprinted by their permission.

"Interpretations of Nature" by Arthur Holmes from *Principles of Physical Geology*, Copyright 1945 The Ronald Press Company, published by The Ronald Press Company (New York) and Thomas Nelson & Sons Ltd. (Edinburgh), reprinted by permission of the author and the publishers.

"The Atmospheric Pattern" from *Global Geography* by George T. Renner and Associates, Copyright, 1944, by Thomas Y. Crowell Company, published by Thomas Y. Crowell Company and reprinted by their permission.

"Crumbling Rocks" by Raymond E. Janssen from *The Scientific Monthly*, August, 1947, Copyright 1947, by The American Association for the Advancement of Science, reprinted by permission of the author and The American Association for the Advancement of Science.

Library of Congress Catalog Card No. 55-11508

MENTOR BOOKS are published by
The New American Library of World Literature, Inc.
501 Madison Avenue, New York 22, New York

PRINTED IN THE UNITED STATES OF AMERICA

"The Erosion Cycle" by Herdman F. Cleland from *Geology, Physical and Historical*, Copyright 1916 by H. F. Cleland, published by The American Book Company, reprinted by their permission.

"Glaciers" by Richard Foster Flint from *Natural History Magazine*, October, 1947, Copyright, 1947, by The American Museum of Natural History, New York 24, N. Y., reprinted by permission of the author and The American Museum of Natural History.

"The Study of the Sea" by Claude E. ZoBell from *Science in the University*, Copyright 1944 by The Regents of the University of California, published by The University of California Press, reprinted by permission of the author and publisher.

"The Make of the Desert" by John C. van Dyke from *The Desert*, Copyright 1901, 1929 by John C. Van Dyke, published by Charles Scribner's Sons, reprinted by their permission.

"X-Raying the Earth" by Reginald A. Daly from the *Harvard Alumni Bulletin*, October 18, 1928, as corrected by the author, 1947, reprinted by permission of The *Harvard Alumni Bulletin*.

"The Problem of Mountains" by Samuel J. Shand from *Earth-Lore*, Copyright 1938 E. P. Dutton & Co., Inc., published by E. P. Dutton & Co. (New York) and Thomas Murby & Co. (London), reprinted by permission of the publishers.

"The Birth of Paricutin" by Jenaro Gonzalez and William F. Foshag from the 1946 *Reports of the Smithsonian Institution*, reprinted by permission of the Smithsonian Institution.

"The Formation of Mineral Deposits" by C. C. Furnas from *The Storehouse of Civilization*, Copyright, 1939, Teachers College, Columbia University, published by the Bureau of Publications, Teachers College, Columbia University, reprinted by their permission.

"The Age of the Earth" by Arthur Holmes from *Endeavour* (London), July 1947, reprinted by permission of the author and the publisher.

"Fossils and Fossil Hunting" by Percy E. Raymond from *Prehistoric Life*, Copyright, 1939, by The President and Fellows of Harvard College, published by Harvard University Press, reprinted by their permission.

"A Living Fossil" by J. L. B. Smith from *The Cape Naturalist* (P. O. Box 16 Rondebosch, C. P., South Africa), July 1939, reprinted by permission of the author and publisher.

"Pools That Reflect the Past" by John C. Merriam from *The Living Past*, Copyright 1930 by Charles Scribner's Sons, reprinted by their permission.

"Search for Early Man" by G. H. R. von Koenigswald from *Natural History Magazine*, January, 1947, Copyright, 1947, by The American Museum of Natural History, New York 24, N. Y., reprinted by permission of the author and The American Museum of Natural History.

"The Future of Man as an Inhabitant of the Earth" by Kirtley F. Mather from the "Eighteenth Annual Sigma Xi Lecture" in the *Sigma XI Quarterly*, Report for 1940, reprinted by permission of the Sigma Xi Fraternity.

CONTENTS

PART I THE NATURE OF THE EARTH 9

Geology, the Easy Science, W. O. Hotchkiss 11

Second Rate Planet, Carey Croneis and William C. Krumbein 19

Interpretations of Nature, Arthur Holmes 26

PART II CHANGES OVER THE EARTH'S SURFACE 44

The Atmospheric Pattern, George T Renner 46

Crumbling Rocks, Raymond E Janssen 58

The Erosion Cycle, Herdman F Cleland 67

The Mississippi, Mark Twain 71

Glaciers, Richard Foster Flint 76

The Study of the Sea and Its Relations to Man, Claude E ZoBell 84

The Make of the Desert, John C. VanDyke 92

PART III STRUCTURE AND COMPOSITION OF THE EARTH 98

X-Raying the Earth, Reginald A. Daly 101

The Problem of Mountains, Samuel J. Shand 110

The Birth of Paricutin, Jenaro Gonzalez and William F. Foshag 121

Rocks and Minerals, Carey Croneis and William C Krumbein 128

The Formation of Mineral Deposits, C. C. Furnas 140

PART ONE

The Nature of the Earth

AT EXACTLY NINE O'CLOCK on the morning of October 26, 4004 B.C., the earth was created, according to a calculation made by the Irish Archbishop Ussher in the mid-seventeenth century. A Hindu calculation, described by Professor Holmes in "The Age of the Earth," placed creation 1,972,949,048 years before the date of his article (A.D. 1947). These mythologies gave explanations of the method as well as the time of creation. This is something modern science is not yet prepared to do, although it has offered a number of interesting hypotheses.

In 1796 the French scientist Laplace suggested that the solar system had originally been a diffuse gaseous nebula, hot and rotating. As the nebula cooled it shrank, leaving behind a series of rings which condensed into the planets and their satellites. The sun remained as residue. The ring which was the forerunner of the earth cooled gradually after condensing, in time became liquid, then solid. This hypothesis gained widespread popularity, but now, as the result of further calculation, it has been abandoned.

Early in the present century the Americans Chamberlin and Moulton suggested that the partial disruption of the sun occurred several billion years ago because of huge tides raised by the close approach of another star. A large amount of matter was thrown off. Most of the ejected matter fell back into the sun, but the rest coalesced into small fragments or planetesimals. After a long period of time, perhaps twenty million years, the larger planetesimals gathered up the smaller to form the planets moving elliptically around the sun. This theory is known as the Planetesimal Hypothesis. Various modifications of it, including the Tidal Hypothesis of the Englishmen Jeans and Jeffreys, have been offered. Mathematical calculations about the possibility of another star approaching near

PART IV EARTH HISTORY

The Age of the Earth, Arthur Holmes 156
The Record of Living Things, W. O. Hotchkiss 159
Fossils and Fossil Hunting, Percy Raymond 168
A Living Fossil, J. L. B. Smith 179
Pools that Reflect the Past, John C. Merriam 189
Search for Early Man, G. H. R. von Koenigswald 197
The Future of Man as an Inhabitant of the Earth, Kirtley Mather 199
207

Geology, The Easy Science

By W. O. Hotchkiss

When the average intelligent person hears science mentioned, he thinks of it as something outside his daily affairs, something difficult, mysterious and even quite beyond his understanding. His impression is true only for the more advanced and specialized parts. It is not at all true for the great fundamental ideas and principles of science. These can be understood by the high-school graduate; they apply to the things with which he comes in daily contact.

In order to brush away the veil of mystery that too often surrounds science, we need to have these fundamental ideas and principles stated in familiar terms. We need to have explained to us, in words from our own vocabulary, that science is merely the statement of the orderly relations between facts, many of which each of us knows or can readily know from common-sense observations of the everyday things about us. Once this explanation is made, we are able to understand causes and effects, so that things begin to appear to us in delightfully simple and orderly relations and not as an appalling number of independent facts each of which must be separately mastered.

It is true that in geology, as in other sciences, there are mysteries and things difficult to understand. Fortunately these need not concern us greatly because most of the important facts are easily understood. All that need be done in order to give us a very satisfying knowledge of things geological is to call them to our attention. Geology concerns itself with the familiar hills and valleys, rivers and lakes, mountains and plains that surround us. It concerns itself not only with great wonders far away, but also with the small, intimate things we can see in our own neighborhood if our eyes are open.

One of the most enlightening things in the study of [illegible] is the attainment of an adequate understanding [illegible] time it has taken nature to write the record we

Geology, The Easy Science

By W. O. Hotchkiss

When the average intelligent person hears science mentioned, he thinks of it as something outside his daily affairs, something difficult, mysterious and even quite beyond his understanding His impression is true only for the more advanced and specialized parts. It is not at all true for the great fundamental ideas and principles of science. These can be understood by the high-school graduate; they apply to the things with which he comes in daily contact.

In order to brush away the veil of mystery that too often surrounds science, we need to have these fundamental ideas and principles stated in familiar terms We need to have explained to us, in words from our own vocabulary, that science is merely the statement of the orderly relations between facts, many of which each of us knows or can readily know from common-sense observations of the everyday things about us Once this explanation is made, we are able to understand causes and effects, so that things begin to appear to us in delightfully simple and orderly relations and not as an appalling number of independent facts each of which must be separately mastered.

It is true that in geology, as in other sciences, there are mysteries and things difficult to understand Fortunately these need not concern us greatly because most of the important facts are easily understood All that need be done in order to give us a very satisfying knowledge of things geological is to call them to our attention. Geology concerns itself with the familiar hills and valleys, rivers and lakes, mountains and plains that surround us. It concerns itself not only with great wonders far away, but also with the small, intimate things we can see in our own neighborhood if our eyes are open

One of the most enlightening things in the study of geology is the attainment of an adequate understanding of the vast time it has taken nature to write the record we

infinitely varied forms of vegetable and animal life. The days of creation have been long and well filled with labor. Well might the ancient Hebrew prophet say, "He stood, and measured the earth; . . . and the everlasting mountains were scattered, the perpetual hills did bow; his ways are everlasting." We can see the labors of creation continuing before our eyes, if we can but enlarge our mental time scale to permit us to see present events in their true relation to those of long ago.

The Story of a Wisconsin Millpond

Geology, in its efforts to bring this long time and its multitude of happenings into understandable scale, has found the year and the century too short to use as time units. It has grouped the past into larger units—into great cycles of similar events—so that our minds can picture them more readily.

To show you how these large group units are selected, I want to tell you the story of a Wisconsin millpond that I once studied for a few interesting hours. This pocket edition of a geologic epoch began with an unusual event in the history of a stream—the building of a dam. It was ended by another unusual event—a flood that destroyed the dam, and cut a tiny canyon through the sediments deposited in the pond. Such epochs, on a vastly larger time scale, measured by the deposition of hundreds or thousands of feet of sediments, are used as units in the story of the billion years of the history of the earth. They begin with an unusual event, the depression of a large area below sea level. They endure millions or tens of millions of years, during which events are infallibly recorded in the sediments. They end with another unusual event—the elevation of the area above the sea and its subjection to the action of the wind, of the rain and of the streams, which gradually wear it away.

As I looked at the vertical sides of the three-foot "canyon" cut in the sediments in the Wisconsin millpond, I could see the edges of thin horizontal layers of different kinds of mud. Closer examination showed that some of these layers were of coarse material and some of fine, that some were light colored and some dark. Some contained

see in the rocks. You and I live our lives in small units. When we were children, a quarter of an hour often seemed too long to be endured, particularly when we waited impatiently for the close of school or the start for a picnic. We measure our ordinary movements and the things close to us in feet and inches, in hours and minutes, in pounds and ounces. Because these units measure our daily activities and near surroundings, we have a fairly definite notion of what they mean. When we begin to group them into larger units and try to think in terms of miles and tons and years, our notions become less accurate. When we multiply these familiar units to describe a country, a mountain, or the life of a nation, the definiteness of our ideas fades and they become vague.

Among time units the longest we can understand from personal experience is our own life span. It is not surprising, then, that we can have no really accurate idea of so long a period as a century. If we think of the six or seven thousand years of recorded history, its beginnings seem incredibly far back, farther back than any of our familiar units will permit us to measure understandingly. When we try to imagine such a vast stretch of time as a billion years, the units we ordinarily use are so absurdly small that they afford us no useful comparison. We must resort to other comparisons to get any kind of picture at all. Let us imagine a man so small that he has to take sixteen steps to go one inch, and so slow that he can take but one step a year. If he lived in New York and wanted to walk to . . . Chicago he would have had to start a billion years ago.

In this story of the billion years of the existence of our earth, the tremendous length of the time involved is one of the ideas we find hard to grasp. Another is the number of things that can happen—even at a slow pace—in a billion years. At the rate of movement of our imaginary small man—one-sixteenth of an inch a year—a mountain range as high as the Rockies could be raised from sea level and lowered back to sea level one hundred and sixty times. A billion years has afforded time for the earth to go through many cycles of changes of great magnitude, and to do so in most leisurely manner. There has been time for the slow, unhurried development of the almost

infinitely varied forms of vegetable and animal life. The days of creation have been long and well filled with labor. Well might the ancient Hebrew prophet say, "He stood, and measured the earth, . . . and the everlasting mountains were scattered, the perpetual hills did bow; his ways are everlasting." We can see the labors of creation continuing before our eyes, if we can but enlarge our mental time scale to permit us to see present events in their true relation to those of long ago.

The Story of a Wisconsin Millpond

Geology, in its efforts to bring this long time and its multitude of happenings into understandable scale, has found the year and the century too short to use as time units It has grouped the past into larger units—into great cycles of similar events—so that our minds can picture them more readily

To show you how these large group units are selected, I want to tell you the story of a Wisconsin millpond that I once studied for a few interesting hours This pocket edition of a geologic epoch began with an unusual event in the history of a stream—the building of a dam. It was ended by another unusual event—a flood that destroyed the dam, and cut a tiny canyon through the sediments deposited in the pond Such epochs, on a vastly larger time scale, measured by the deposition of hundreds or thousands of feet of sediments, are used as units in the story of the billion years of the history of the earth. They begin with an unusual event, the depression of a large area below sea level They endure millions or tens of millions of years, during which events are infallibly recorded in the sediments They end with another unusual event—the elevation of the area above the sea and its subjection to the action of the wind, of the rain and of the streams, which gradually wear it away

As I looked at the vertical sides of the three-foot "canyon" cut in the sediments in the Wisconsin millpond, I could see the edges of thin horizontal layers of different kinds of mud. Closer examination showed that some of these layers were of coarse material and some of fine, that some were light colored and some dark. Some contained

Swedish lakes, found that the climate had left a continuous record for the last eight thousand years, so that it is possible to tell with quite pleasing accuracy the various "spells of weather" which marked that long stretch of time.

The story of the mud layers in the Wisconsin millpond illustrates perfectly three of the great fundamental principles of geology. The stream that flowed into the millpond was typical of all streams, big and little. It carried mud and sand and pebbles with it in its flow. It deposited this material when its rapid flow was stopped in the millpond. When the flood came that broke the dam, this deposit in the pond again started on its way toward the sea, to be redeposited in the next quiet water, and so by successive steps finally to be carried to the Gulf of Mexico and find a resting place in the sea.

The material carried into the millpond had been washed from the adjacent hillsides into the stream by the rain, a process called "erosion." Any sand bank or rivulet shows this process at work. It is the process which carved the magnificent gorge of the Grand Canyon, but it is not different from the process you can see going on in your back yard during a shower or when the garden hose is at work.

The other fundamental principles learned from the study of the millpond stream are known as "transportation" and "deposition." The stream transported the mud washed into it and, acting on the third fundamental principle, "deposition," deposited its load when it reached quiet water.

Erosion, transportation and deposition are three fundamental geologic processes which we can see at work all about us. If with these processes in mind we look through the eyes of a billion years, the "everlasting hills" become only the uneroded remnants of hills once *larger* and *different* in shape. The pleasant valleys we love to look upon were once smaller and of *different form*.

Erosion and transportation are bit by bit continuously carving the face of the earth into new forms. Those who *see* and *understand* take delight not only in rebuilding in imagination the forms that have been worn away but also in picturing in the mind's eye those forms that natural processes will develop in the future.

Finally, we can go over in our minds the full cycle of events: (1) fresh beach sands being deposited on a sinking shore; (2) this sand deposit being raised above the sea and cemented into sandstone; and (3) the sandstone then being attacked by the waves and worn down into sand to build a new beach. These are the familiar principles seen in the Wisconsin millpond: (1) *deposition* and raising and hardening; (2) *erosion* by the waves; and (3) *transportation* along the beach.

As our Scotch farmer gradually reached the fullness of these conclusions—and such conclusions do not come so quickly as they are pictured above, but only by slow, logical analysis and anxious, careful thought—he could look back into the past and imagine a numberless succession of such cycles of erosion, transportation and deposition He could picture the cliffs on innumerable successions of beaches in bygone ages being worn down, transported by the waves, deposited on the beach and raised up above the sea, only to repeat the cycle. He could turn to the future and see the present rippled beach sands under his feet raised above the sea hardened into rock and again eroded into cliffs in endless successions of this cycle Small wonder then that he wrote, "I see no vestige of a beginning, no prospect of an end" There must have come to him at that time the vision of the vast sweep of the ages which go to make up the story of the billion years of the earth's history. His simple but epoch-making discoveries started geological science on the way to reading that history in the rocks.

The great discoveries of science, once made, appear so simple that they are almost disappointing. A Franklin flies a kite and finds that lightning is the same as electricity. A Faraday, moving a boy's toy magnet, finds that an electric current is produced in a nearby wire, and his simple discovery becomes the foundation of our whole electrical industry. When he was rather scornfully asked by a legislator as to the usefulness of his discovery (which was at once recognized as a great scientific principle) Faraday testily replied, "Perhaps you can tax it someday." And the legislators have.

Our Scotch farmer, Hutton, probably would *not* have dared even to suggest that the consequences of his dis-

The Discoveries of a Scotch Farmer

. . . In view of the strong hold that tradition has on our thoughts, even today, it is not strange that the simple processes of erosion, transportation and deposition, so clearly observable in the Wisconsin millpond, were not understood even by the most advanced scientific men much over a hundred years ago [*Ed. note: late 18th Century*].

It was reserved for a Scotch farmer, a retired physician named Hutton, to see them in their true nature and in all their vast significance.

We can picture him in his strolls along the sandy beaches of his seacoast farm. At his right was the water with its ceaselessly active waves, at his left were cliffs of sandstone and limestone in alternating beds. On a quiet day the waves contented themselves with making beautiful ripple marks on the sandy beach. On rough days they beat wildly at the cliffs and tore them into fragments, which were worn into pebbles and sand grains and added to the beach.

In imagination we can walk along with him and admire the sculpture of the ripple marks just below the water's edge. When we come to a fresh slab of sandstone, beaten from the cliff by a recent storm, and find that it shows the same beautifully carved ripple marks which we see in the loose sand of the beach, we can take with him the first simple step toward a great discovery. We can conclude (as he did) that the ripple marks on the sandstone block must have been made by the waves on a beach of some long gone age. We can clamber over the cliffs and find all through the sandstone other ripple-marked beds that had been buried by the sand of succeeding beds and thus preserved for us to see. Next we can conclude that the shore on which this sandstone was being deposited must have been sinking land and that each rippled beach was covered by the later ones deposited over it. It then becomes obvious that later on these old beach sands must have been raised above the sea and hardened into sandstone, only to be attacked by the waves of the present day and partly worn away, the remainder being left as the pres n cliffs.

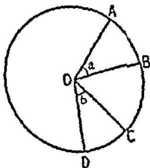
cycles of this kind. There must have been time for many valleys to have been carved in uplifted sea deposits—time for many long, slow, alternate uplifts and depressions of the places where most of us live, so that under our feet and in the hills about us are the records of periods of alternate sea and land, of deposition and erosion, many times repeated.

Second-Rate Planet

By Carey Croneis and William Krumbein

Among the nine planets that speed endlessly around the sun is this terrestrial sphere It is neither the largest nor the most massive, and astronomers are apt to remind us not only that it is a second-rate planet but that our sun itself *is only a third-rater among the other stars. But because* the earth is our abode, to us it is of supreme importance.

One of the first things we learn about the earth is that it is round. Some of us may even remember that a simple proof is that large objects gradually disappear below the horizon as one moves away from them This is at best only a qualitative argument, but there are several precise proofs As an example of the scientists' method of attacking such problems, let us follow through the steps involved in determining both the shape and size of the earth



Angle a is the same as angle b, provided arc AB = arc CD

A little study of a circle will show that the property of circularity involves certain relations between the length of an arc of the circle and the angle made by the radii limiting this arc Note in the accompanying figure that the radii OA and OB establish the arc AB. This arc is so related to the

coveries would ever be of material use to mankind; much less would he have had the temerity to suggest that they might someday be taxable. But out of them grew the long continued series of geological observations that have helped us find and use the tremendous wealth of mineral resources which make living conditions in our generation so different from those of a hundred years ago.

Hutton studied the cliffs and noted the succession of beds of different kinds of sandstone and limestone lying one upon another. He crossed a small stream and found that the cliffs on the other side showed the same layers in the same order, and he then concluded that these beds of rock must once have been continuous between the cliffs, for the old beach and sea-bottom deposits could not have been built up in separate hills as they now appeared but must have been continuous like the present beach. He watched the stream in the valley between the cliffs and noted that it was slowly but unceasingly carrying its load of sand and mud from the valley sides into the sea. He studied the little branch valleys and depressions and found that, even though no water was then flowing in some of them, each one carried unmistakable evidence that a rivulet flowed in rainy weather—a rivulet that did its allotted share of work each season in carrying material from along its course into the main stream. So it gradually became certain, as his studies continued, that the whole valley had been carved by the processes of erosion and transportation which he could see in slow but unremitting operation all about him.

The difficult thing to picture was the vast extent of time required to remove the enormous amount of material which once had been where the valley now lay. The change observable in a man's whole lifetime was exceedingly small compared to the total change that Hutton could see must have taken place. And yet here were the processes slowly at work, and here was the result. There was no escaping the conclusion that the processes *must have worked long enough to produce the result.* Truly, in the millions of years that go to make the billion and more of the story the rocks tell us, there must have been ample time for many

the plumb line of the second observatory is 30°, we next project the plumb lines into the interior of the earth, where they meet. The angle made by their junction is also 30°, because the lines *AC* and *BD* are parallel, and the line *OB* cutting these parallel lines makes an equal angle with each. Thus, it follows that an angle of 30° at the earth's center subtends a distance of about twenty-one hundred miles along the surface. If we next divide through by thirty, we see that an angle of 1° must subtend a distance of some seventy miles.

Should the same experiment be repeated elsewhere on the earth, and the net result prove to be the same, then we might safely conclude that the earth is spherical. Such measurements have actually been made at many places over the surface of the earth, and everywhere the general relations hold, so that there is no doubt that the earth is spherical. Precisely speaking, of course, the earth is a spheroid, and flattened slightly at the poles This flattening is so slight that between the polar and equatorial diameters there is a difference of only twenty-seven miles, which is less than one-half of 1 per cent. It is, in fact, so insignificant that it amounts to only about a half inch on a ten-foot globe, and consequently is not shown even on the largest of such representations of the earth.

We have by these experiments found not only that the earth is spherical but also that every degree of the interior angle subtends about seventy miles on the surface. Since there are 360° in a complete circle, we need only multiply our seventy miles by 360 to obtain the *circumference*, or distance around the earth When this is done, the result is approximately twenty-five thousand miles Once we have the value of the earth's circumference, we can easily find its *diameter*, or the distance through the earth. We simply divide the circumference by 3 1416 (the value of the old familiar pi of school days) and the answer is about eight thousand miles, which is the approximate diameter of the earth.

As long as we are on the subject of measurements, let us pursue it a bit further. If we know the diameter of the earth, we can find its *volume*, because the volume of any ball is 3 1416/6 times the diameter cubed If we put in our known values, we find that the volume of the earth

the plumb line of the second observatory is 30°, we next project the plumb lines into the interior of the earth, where they meet The angle made by their junction is also 30°, because the lines AC and BD are parallel, and the line OB cutting these parallel lines makes an equal angle with each. Thus, it follows that an angle of 30° at the earth's center subtends a distance of about twenty-one hundred miles along the surface. If we next divide through by thirty, we see that an angle of 1° must subtend a distance of some seventy miles.

Should the same experiment be repeated elsewhere on the earth, and the net result prove to be the same, then we might safely conclude that the earth is spherical. Such measurements have actually been made at many places over the surface of the earth, and everywhere the general relations hold, so that there is no doubt that the earth is spherical. Precisely speaking, of course, the earth is a spheroid, and flattened slightly at the poles. This flattening is so slight that between the polar and equatorial diameters there is a difference of only twenty-seven miles, which is less than one-half of 1 per cent. It is, in fact, so insignificant that it amounts to only about a half inch on a ten-foot globe, and consequently is not shown even on the largest of such representations of the earth

We have by these experiments found not only that the earth is spherical but also that every degree of the interior angle subtends about seventy miles on the surface. Since there are 360° in a complete circle, we need only multiply our seventy miles by 360 to obtain the *circumference*, or distance around the earth. When this is done, the result is approximately twenty-five thousand miles. Once we have the value of the earth's circumference, we can easily find its *diameter*, or the distance through the earth. We simply divide the circumference by 3.1416 (the value of the old familiar *pi* of school days) and the answer is about eight thousand miles, which is the approximate diameter of the earth.

As long as we are on the subject of measurements, let us pursue it a bit further. If we know the diameter of the earth, we can find its *volume*, because the volume of any ball is 3.1416/6 times the diameter cubed. If we put in our known values, we find that the volume of the earth

ground and temperament of the American people fit them peculiarly for leadership in implementing that program—and this with all respect for the invaluable co-operation which must come from other nations, that practical projects for the development of underdeveloped areas already await execution; and that the result of these projects can be a busier, happier, more peaceful world.

This is, therefore, a cheerful book

I hear my neighbors shout, "Doom, doom, doom!"—in magazines and books, over the air, at cocktail parties They toss the H-bomb back and forth at the dinner table, half expecting it to drop and explode in the soup tureen They cannot eat without foreseeing Malthusian starvation, or wash their hands without brooding over germ warfare. They see no hope. Even here in America, they cry, is not freedom yielding before a steadily swelling government? Is not another depression just around the corner? Are not the Communists everywhere?

They fear, these neighbors of mine, that the totalitarian way of life with which we are gripped in deadly battle stands on the side of history They fear that it is bound to wax daily in boldness and vigor, while we decline

But if there is doom in the air, it is not the doom of freedom. The Communism which terrifies my neighbors is no harbinger of the future It is a last dying convulsion of man's age old slavery to the overseer and the all-powerful state. Revolution is indeed in the air, but it can be the sort of revolution which inspired the War of 1776, and which in the Second World War enabled the United States to double her productivity almost overnight.

The net effect of the Communist drive can be to quicken release of the energies of free men We are learning the weaknesses we must correct and the strengths we must develop. Communism is not destroying democracy, it is forcing democracy to fulfill itself.

Arnold Toynbee tells of an English herring fisherman who dropped his catch alive into tanks, where they swam about until

the Soviet system. The Russians have their way of doing things just as the Chinese have, and the Patagonians, and the Americans.

But Point 4 can demonstrate once for all that the future of the world *does not hang on Russia. It hangs on us.*

1

Behind the Bold New Program

In Point 4 of his 1949 inaugural address, President Truman stated as a national policy that "we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." He called for the co-operation of American business, agriculture, and labor He invited other countries to help us to "foster capital development" in those areas, and to pool their technological resources with ours in "a worldwide effort for the achievement of peace, plenty, and freedom"

The President couched his tremendous proposal in general terms. There were no lists of the areas he had in mind, no estimate of costs, no blueprints Some commentators shrugged off the whole thing as a bit of harmless oratory. "After all, he had to say something, didn't he?"

It soon became evident that these doubters were as wrong as those who shrugged off the 1947 Harvard speech in which General Marshall launched the European Recovery Program. The United States was being steered once more into a new and uncharted sea, from which return would not be easy Some Americans sensed this at once; they reacted with a shock not unlike the one they had felt when word was flashed to them of the Hiroshima bomb. How, they asked, could so massive a reorientation of government policy have taken place overnight, without advance warning?

The answer was that on a piecemeal basis the Bold New Program, however bold it might become, was not new. The idea o

rural demonstration projects, working on a self-help basis, have taught lessons in the Middle East which, passing from village to village and farm to farm, have bettered the lot of tens of thousands of men, women, and children. The Rockefeller Foundation has wiped out age-old plagues Religious groups have realized the need for healthy bodies as containers of healthy minds and spirits They have established not only churches but hospitals, colleges, and agricultural training centers in underdeveloped areas

Ten years ago a world development program was as absurd a concept to the average American as radar or a rocket plane. But his mind was being prepared unawares—by the Good Neighbor Policy, Lend-Lease, the Second World War, UNRRA, the United Nations, the schism between Russia and the West, finally by the Marshall Plan

If the Marshall Plan concept of helping ourselves by helping others to help themselves was sound for Europe, said some, it should be sound for the rest of the free world as well

The pseudo recession which seeped into the United States in the first half of 1949 added fresh arguments for development of backward areas It became evident that in the present state of international co-operation there would not be enough markets to go around, *once* Europe was back on her industrial feet. Cutthroat competition for shrinking markets could result only in trade warfare—and trade warfare, with its weapons of dumping, blocked currencies, high tariffs, and competitive devaluation, is scarcely the ideal foundation for an enduring peace and a prosperous world The alternative of creating rich new markets in Asia, Africa, Latin America, and the Middle East appeared to economists, businessmen, and social scientists alike as at worst a stopgap to prevent trade war from becoming catastrophic, and at best a door into a better-feed, more productive, happier, and more peaceful world

More than half of humanity today lives in a chronic state of semi-starvation Their energies are drained dry by the effort of

fervid admirer of the average American motion picture, or unaware of the distortions which frequent it, to recognize that Hollywood has performed an invaluable service in presenting America to the world Westinghouse is one of many American companies which each year bring foreign students to this country to study American industrial techniques in operation. The amazing *Reader's Digest*, which now sells more than 7,000,000 copies abroad each month in eleven languages and nineteen separate editions, has demonstrated dramatically that people all over the world have similar interests and aspirations.

Non-profit groups and agencies have become increasingly aware of the menace and the hope that lie in wait in the underdeveloped countries of the world.

In 1946 a conference to study conservation and development of world resources, with emphasis on "the possibilities of a single-agency administration, such as the TVA," was proposed to the United Nations by the United States Government. In the same year the International Technical Congress at Paris proposed formation of a World Engineering Federation to help develop backward lands

For nearly two decades foreign governments have been sending observers to study the work of our Tennessee Valley Authority and Bureau of Reclamation, while we in turn have sent experts to recommend and supervise irrigation and development projects in other countries. Scores of United States agencies have given technical aid abroad. For ten years the Department of Agriculture, for instance, has been helping Latin American countries to increase their agricultural efficiency, the participating governments putting up approximately $3 for every $1 invested by the United States. Today the operation includes some 220 research and demonstration projects, and has spread to the Middle East, Asia, and the Philippines

Private non-profit foundations have demonstrated that it is possible to bring about remarkable improvements in living conditions for modest expenditures of money. The Near East Foundation operates on a very few thousand dollars a year, yet its

rural demonstration projects, working on a self-help basis, have taught lessons in the Middle East which, passing from village to village and farm to farm, have bettered the lot of tens of thousands of men, women, and children The Rockefeller Foundation has wiped out age-old plagues. Religious groups have realized the need for healthy bodies as containers of healthy minds and spirits They have established not only churches but hospitals, colleges, and agricultural training centers in underdeveloped areas

Ten years ago a world development program was as absurd a concept to the average American as radar or a rocket plane But his mind was being prepared unawares—by the Good Neighbor Policy, Lend-Lease, the Second World War, UNRRA, the United Nations, the schism between Russia and the West, finally by the Marshall Plan

If the Marshall Plan concept of helping ourselves by helping others to help themselves was sound for Europe, said some, it should be sound for the rest of the free world as well

The pseudo-recession which seeped into the United States in the first half of 1949 added fresh arguments for development of backward areas It became evident that in the present state of international co-operation there would not be enough markets to go around, once Europe was back on her industrial feet. Cut-throat competition for shrinking markets could result only in trade warfare—and trade warfare, with its weapons of dumping, blocked currencies, high tariffs, and competitive devaluation, is scarcely the ideal foundation for an enduring peace and a prosperous world The alternative of creating rich new markets in Asia, Africa, Latin America, and the Middle East appeared to economists, businessmen, and social scientists alike as at worst a stopgap to prevent trade war from becoming catastrophic, and at best a door into a better-feed, more productive, happier, and more peaceful world

More than half of humanity today lives in a chronic state of semi-starvation Their energies are drained dry by the effort of

keeping alive. They drag out their days in poverty, ignorance, and filth. They are ready to die at an age when the average American is scarcely ready to marry. A wage-earner may earn a nickel a day in India, a cent an hour in China, as little as $20 a year in Egypt.

And what business is that of ours? There is, of course, the simple matter of human sympathy, but that alone is unlikely to shape a decisive government policy. There is the waste of precious human resources, but the world can scarcely miss what it has never used No, America is impelled to help inhabitants of underdeveloped lands to help themselves because they are a drag on the progress of all other peoples, including Americans, because they present a standing condition of social unrest, an invitation to revolution and war; because, finally, if they are denied democratic progress they will fall prey to Communism or some other form of reaction, and we shall remain but briefly a crumbling island of freedom in a totalitarian sea

If, on the other hand, the starvation is replaced by plenty, if the filth is cleared away, if steel plows replace the wooden ones, if oxen supplement human muscles and tractors eventually replace the oxen, then vast new energies will be released for the betterment of mankind

Economically, the prospects are limitless If everybody in the world used as much soap as Americans do, there would have to be four times as much soap If they used as much cotton as we do, there would have to be three times as much cotton. If the rest of the world tomorrow were to put in 20,000,000 miles of new roads, our roads would still extend farther than theirs. If they added 350,000,000 new telephones, 450,000,000 automobiles, 600,000,000 radios, we should still have more telephones and automobiles and radios per person than they And if the peoples of [illegible] oped areas live better, we shall live better too [illegible]

Tr [illegible] e Bold New Program was first pro-
[illegible] l agreement among Americans that

the skills and private capital of the United States might be used on a busines basis to better the world

There was, however, many a kink to iron out Business leaders were fearful lest Point 4 mask what might turn out to be simply another government spending program Liberals were fearful lest it mask a newly subtle economic and political imperialism

To minimize these risks, the authors of Point 4 made a cautious opening gambit They presented to Congress bills which to the more ardent Bold New Programmers seemed little more than a codification of activities already going on

And indeed, the bills were grounded as solidly as was possible in the bedrock of proven experience The government was asked to make technical assistance available to farmers, industrialists, and others abroad the recipients paying a pro rata share of the costs In addition it was proposed to guarantee new American investments against losses due to abnormal conditions such as currency inconvertibility or expropriation Businessmen insisted that a guarantee by the American government alone was begging the issue, recipient nations should make similar guarantees

Acting under the impetus of the President's speech, and encouraged by the support anticipated from the United States, the United Nations Economic and Social Council drew up its own program of technical assistance, unanimously approved by the General Assembly in the fall of 1949 Not formally part of Point 4, the UN program nonetheless will be complementary to our own and will be supported in considerable measure by American funds and technical skills

The first steps toward a more plentiful world, so far as Point 4 is concerned, will rarely include mammoth TVA-like developments Rather, the preconditions for industrialization will generally be laid down by a host of modest reforms which can be achieved at little expense, and sometimes at no expense at all Whatever vast projects may some day become practical, it

keeping alive They drag out their days in poverty, ignorance, and filth. They are ready to die at an age when the average American is scarcely ready to marry. A wage-earner may earn a nickel a day in India, a cent an hour in China, as little as $20 a year in Egypt.

And what business is that of ours? There is, of course, the simple matter of human sympathy, but that alone is unlikely to shape a decisive government policy. There is the waste of precious human resources, but the world can scarcely miss what it has never used No, America is impelled to help inhabitants of underdeveloped lands to help themselves because they are a drag on the progress of all other peoples, including Americans; because they present a standing condition of social unrest, an invitation to revolution and war, because, finally, if they are denied democratic progress they will fall prey to Communism or some other form of reaction, and we shall remain but briefly a crumbling island of freedom in a totalitarian sea

If, on the other hand, the starvation is replaced by plenty, if the filth is cleared away, if steel plows replace the wooden ones, if oxen supplement human muscles and tractors eventually replace the oxen, then vast new energies will be released for the betterment of mankind.

Economically, the prospects are limitless If everybody in the world used as much soap as Americans do, there would have to be four times as much soap. If they used as much cotton as we do, there would have to be three times as much cotton. If the rest of the world tomorrow were to put in 20,000,000 miles of new roads, our roads would still extend farther than theirs If they added 350,000,000 new telephones, 450,000,000 automobiles, 600,000,000 radios, we should still have more telephones and automobiles and radios per person than they. And if the peoples of underdeveloped areas live better, we shall live better too.

From the time that the Bold New Program was first proclaimed, there was general agreement among Americans that

the skills and private capital of the United States might be used on a busines basis to better the world

There was, however, many a kink to iron out Business leaders were fearful lest Point 4 mask what might turn out to be simply another government spending program Liberals were fearful lest it mask a newly subtle economic and political imperialism

To minimize these risks, the authors of Point 4 made a cautious opening gambit They presented to Congress bills which to the more ardent Bold New Programmers seemed little more than a codification of activities already going on

And indeed, the bills were grounded as solidly as was possible in the bedrock of proven experience. The government was asked to make technical assistance available to farmers, industrialists, and others abroad the recipients paying a pro rata share of the costs In addition, it was proposed to guarantee new *American investments against losses due to abnormal conditions* such as currency inconvertibility or expropriation Businessmen insisted that a guarantee by the American government alone was begging the issue, recipient nations should make similar guarantees

Acting under the impetus of the President's speech, and encouraged by the support anticipated from the United States, the United Nations Economic and Social Council drew up its own program of technical assistance, unanimously approved by the General Assembly in the fall of 1949 Not formally part of Point 4, the UN program nonetheless will be complementary to our own and will be supported in considerable measure by American funds and technical skills

The first steps toward a more plentiful world, so far as Point 4 is concerned, will rarely include mammoth TVA-like developments Rather, the preconditions for industrialization will generally be laid down by a host of modest reforms which can be achieved at little expense, and sometimes at no expense at all. Whatever vast projects may some day become practical, it

is perfectly practical right now to teach farmers better ways to farm and workers better ways to work.

"I've seen three men dipping water out of a canal," recalls Norris E. Dodd, Director-General of the United Nations Food and Agricultural Organization, "each using a leather bucket to lift a little water up the bank to a hole from which the man above him dipped in turn They could irrigate a patch just about big enough to keep their families poorly fed. The kind of little gasoline pump everyone has seen draining a street excavation would pitch the water over the ten-foot bank and wet more crop land in an hour than those three men would in a day."[1]

Mr Dodd urges that while these people wait for dams they sink wells, that while they wait for massive industries they work in small village shops at making hand cultivators, hoes, scythes; that while they wait for fertilizer factories they learn such simple techniques as enriching their soil by plowing under green legume crops, that while they wait for hospitals they learn how proper drainage, combined with a few chemicals and a little spray equipment, can combat the malaria which last year incapacitated 100,000,000 people in India alone. Before seeking to match economically the United States of 1950, he suggests that they try to catch up with our technical level of 1800.

When underdeveloped areas have begun to increase productivity at an ever faster tempo, under their own power, they will be ready for projects of a massiveness which cannot be financed without government aid. These public service developments may in some instances take place concurrently with Point 4. But while they will feed on its spirit, they will not partake of its flesh. Point 4 may help in planning or in laying the groundwork; but Point 4 itself will have no funds available for damming rivers and irrigating deserts Those funds must come from such agencies as the Export-Import Bank or the World Bank, acting according to their own established criteria of what does and what does not represent a bankable risk.

Underindustrialized nations, frequently with the help of

[1] *New York Times Magazine* Oct 9, 1949

American engineers, have been blueprinting development projects which would be practical and self-liquidating—if only there were money, machinery, and techniques to turn the blueprints into dams, fertilizer plants, highways, and factories. Herbert Hoover pointed out in 1946 that by proper irrigation Iraq, which supported 30,000,000 people before the time of Christ, could again provide some of the world's richest land for millions of settlers. The soil conservationist Walter Lowdermilk outlined a Jordan Valley Authority which might well change the face of the whole Near East India put on paper a program to double the living standards of her 400,000,000 inhabitants in fifteen years

In transitional areas like Latin America, great works are already under way Elsewhere they await materials, financing, and improvements in basic living conditions The largest of them—the Yangtze Dam, for instance, or the hydroelectric scheme for the headwaters of the Ubangi—may be only dreams for many years to come. The world cannot use them yet But it will.

Before these projects become actualities, means must be found to finance each one, to pacify the restless lands where they will be implemented, to insure that each new development answers a real and present need. The world's financial and technical resources being limited, there will have to be priorities among even the most immediately practical programs. And after the developments are complete, their full impact cannot be felt for half a generation in so retarded an area as India, or twice that length of time in an Ethiopia or a China.

The pressure to gamble our limited resources on dubious appeals may be strong The Turks, for instance, might well feel that they need a double-track railway to connect the Karabuk steel mill with its ore deposits, and that we should pay for the double-tracking, when actually they need more efficient operation of the single-track railway already in their possession. An investment of a few thousands in training Turkish railway administrators might do more good than an expenditure of millions on a new road.

Available American money, private or public, available Amer-

is perfectly practical right now to teach farmers better ways to farm and workers better ways to work.

"I've seen three men dipping water out of a canal," recalls Norris E. Dodd, Director-General of the United Nations Food and Agricultural Organization, "each using a feather bucket to lift a little water up the bank to a hole from which the man above him dipped in turn. They could irrigate a patch just about big enough to keep their families poorly fed. The kind of little gasoline pump everyone has seen draining a street excavation would pitch the water over the ten-foot bank and wet more crop land in an hour than those three men would in a day."[1]

Mr. Dodd urges that while these people wait for dams they sink wells, that while they wait for massive industries they work in small village shops at making hand cultivators, hoes, scythes; that while they wait for fertilizer factories they learn such simple techniques as enriching their soil by plowing under green legume crops, that while they wait for hospitals they learn how proper drainage, combined with a few chemicals and a little spray equipment, can combat the malaria which last year incapacitated 100,000,000 people in India alone. Before seeking to match economically the United States of 1950, he suggests that they try to catch up with our technical level of 1800.

When underdeveloped areas have begun to increase productivity at an ever faster tempo, under their own power, they will be ready for projects of a massiveness which cannot be financed without government aid. These public service developments may in some instances take place concurrently with Point 4. But while they will feed on its spirit, they will not partake of its flesh. Point 4 may help in planning or in laying the groundwork; but Point 4 itself will have no funds available for damming rivers and irrigating deserts. Those funds must come from such agencies as the Export-Import Bank or the World Bank, acting according to their own established criteria of what does and what does not represent a bankable risk.

Underindustrialized nations, frequently with the help of

[1] *New York Times Magazine*, October 9, 1949.

American engineers, have been blueprinting development projects which would be practical and self-liquidating—if only there were money, machinery, and techniques to turn the blueprints into dams, fertilizer plants, highways, and factories Herbert Hoover pointed out in 1946 that by proper irrigation Iraq, which supported 30,000,000 people before the time of Christ, could again provide some of the world's richest land for millions of settlers. The soil conservationist Walter Lowdermilk outlined a Jordan Valley Authority which might well change the face of the whole Near East India put on paper a program to double the living standards of her 400,000,000 inhabitants in fifteen years

In transitional areas like Latin America, great works are already under way Elsewhere they await materials, financing, and improvements in basic living conditions The largest of them—the Yangtze Dam, for instance, or the hydroelectric scheme for the headwaters of the Ubangi—may be only dreams for many years to come. The world cannot use them yet. But it will

Before these projects become actualities, means must be found to finance each one, to pacify the restless lands where they will be implemented, to insure that each new development answers a real and present need The world's financial and technical resources being limited, there will have to be priorities among even the most immediately practical programs. And after the developments are complete, their full impact cannot be felt for half a generation in so retarded an area as India, or twice that length of time in an Ethiopia or a China.

The pressure to gamble our limited resources on dubious appeals may be strong The Turks, for instance, might well feel that they need a double-track railway to connect the Karabuk steel mill with its ore deposits, and that we should pay for the double-tracking, when actually they need more efficient operation of the single-track railway already in their possession. An investment of a few thousands in training Turkish railway administrators might do more good than an expenditure of millions on a new road.

Available American money, private or public, available Amer-

is perfectly practical right now to teach farmers better ways to farm and workers better ways to work.

"I've seen three men dipping water out of a canal," recalls Norris E. Dodd, Director-General of the United Nations Food and Agricultural Organization, "each using a leather bucket to lift a little water up the bank to a hole from which the man above him dipped in turn They could irrigate a patch just about big enough to keep their families poorly fed. The kind of little gasoline pump everyone has seen draining a street excavation would pitch the water over the ten-foot bank and wet more crop land in an hour than those three men would in a day."[3]

Mr. Dodd urges that while these people wait for dams they sink wells, that while they wait for massive industries they work in small village shops at making hand cultivators, hoes, scythes; that while they wait for fertilizer factories they learn such simple techniques as enriching their soil by plowing under green legume crops, that while they wait for hospitals they learn how proper drainage, combined with a few chemicals and a little spray equipment, can combat the malaria which last year incapacitated 100,000,000 people in India alone Before seeking to match economically the United States of 1950, he suggests that they try to catch up with our technical level of 1800

When underdeveloped areas have begun to increase productivity at an ever faster tempo, under their own power, they will be ready for projects of a massiveness which cannot be financed without government aid These public service developments may in some instances take place concurrently with Point 4 But while they will feed on its spirit, they will not partake of its flesh. Point 4 may help in planning or in laying the groundwork; but Point 4 itself will have no funds available for damming rivers and irrigating deserts. Those funds must come from such agencies as the Export-Import Bank or the World Bank, acting according to their own established criteria of what does and what does not represent a bankable risk.

Underindustrialized nations, frequently with the help of

[3] *New York Times Magazine* October 9, 1949.

of investment, they may also be prerequisites of any private investment at all The countries which most need financial help will frequently be the ones which have to go through the longest preliminary periods of improvement in their basic economies.

In the chapters immediately following we shall seek some clue as to whether the great effort which will be required to improve those basic economies is worthwhile, or whether in the long run it will simply result in more starvation for more people.

We shall probe British experience in the past century for evidence as to when investment abroad makes sense, and when on the contrary it may prove disastrous to investor and investee alike.

We shall explore, too, some implications of our own historic passage from self-containment to raw imperialism, from imperialism to dollar diplomacy, from dollar diplomacy to the Good Neighbor Policy and the Bold New Program

First of all, however, let us ask ourselves whether that widening of horizons was an irreversible process—or whether, if we wished, we might now withdraw from the world arena, leaving our work scarcely begun

There is no denying the reality and power of the temptation to retire What would happen if we yielded to it?

2

The Temptation to Retire

DURING WORLD WAR II, the United States poured millions of dollars a month into Latin America as an economic corollary of the Good Neighbor policy Six months after the surrender of Japan much of that aid had been terminated By the end of 1949 many liberal Latin American regimes which had pinned their hopes of survival on a consistent improvement in economic conditions were no longer in existence

With such an example before them, it is only natural that any nation which now stakes its future on the durability of the Bold New Program should want certain assurances. To what extent is

ican skills, private or public—with all the available money and skills of the other industrialized nations thrown in—are not enough to lift the world from its misery and put it on its feet There is not that much money, and there is not that much skill. But a comparatively modest investment of money and skills may provide the slap which can set a new-born economy to breathing

If projects launched as a result of the Bold New Program are chosen on a basis of need and practicality, if they are operated by businessmen under politically stable conditions, the cost can be kept in a sensible ratio to the accomplishments, and the investment can be returned

Only after the ground has been readied—in some cases by government-financed developments, in all cases by achievement of friendly governmental attitudes and a minimum level of health, agriculture, schooling, communications, and transportation—is private investment likely to assume significant proportions.

The investors will have to submit to conditions laid down by a newly sensitive world conscience—conditions making selfish exploitation difficult or impossible, and frequently eventuating in local control of the enterprises that have been established. The United Nations has insisted that aid must not be "a means of foreign economic and political interference in internal affairs." Wherever possible, local capital should be interested, and always local skills should be developed and utilized in the projects.

Recipient areas will have to learn, too, that the biggest way of doing things is not always the best way. Sound industrialization grows indigenously, and from the ground up.

The countries in which investment takes place will have to relax the onerous conditions which now too often surround the introduction of foreign capital—and agreements to that effect should be spelled out in advance. We face the paradox that while political stability and willingness to abide by the rules of the international free-capital market are long-range goals

far-sighted foreign policy. Yet even now the administration feels obliged to spend in the neighborhood of a billion dollars a year to support farm prices, which implies uneconomic import restrictions—as in the cases of butter, wool, sugar, wheat, cotton—and willingness to dump our surplus abroad. Dumping does not bolster international amity. Instead, as John Davenport observed in *Fortune* magazine, "It makes nonsense of the Administration's whole reciprocal-trade and low-tariff policies, and the lip service that is given to promoting world trade."

It is by no means a foregone conclusion that this country, given a domestic crisis, will turn its back on the rest of the world. But the temptation to cut our foreign commitments will be strong Indeed, it is on the persuasive power of that temptation that Russia seems to have gambled much of her postwar foreign policy.

Already such opinion makers as Henry Hazlitt, writing in *Newsweek*, are urging us down the path foreseen by the Kremlin The Bold New Program, which can be one of the most telling blows ever delivered against expanding Communism, is credited by Hazlitt to Earl Browder and the Communist Party. He complains that 'Every million dollars of capital we send abroad sets back our own capital development by just that much"

In the event of a real depression there will be others to argue, perhaps more plausibly, for a self-contained and self-centered America It will be pointed out that we are not a nation at all but a continent—nay, a hemisphere We need not sell our surplus abroad, because we can dispose of it to our own people through TVAs, stamp plans, housing, social security, medical insurance, and a thousand and one vast governmental developments. It will be argued that economically the eastern world, with its troublesome Russia, its starving millions, its wars and threats of war, is not a necessity to us It is simply a nuisance.

It will be contended, with evidence, that if tomorrow the earth were to shudder, twist, and finally wrench apart like a giant amoeba, the eastern half careening off into space and the

this venture in good neighborliness a hastily daubed-on war-paint, serving to impress ourselves and others while we do battle with the Russian bear? Once the bear is no longer a threat, how strong will be the impulse to wash our faces and disappear with a sigh of relief into the tent where we have not only lived but lived fatly for so many generations?

It is doubtless true, as Winston Churchill says, that "under the impact of Communism all of the free nations are being welded together as they never have been before, and never could be, but for the harsh external pressure to which they are being subjected." But coalitions based simply on fear ordinarily break up when the fear is at an end, unless the interim has been used for wise and permanent building; and no small part of that building must take place in the minds of men.

On Capitol Hill and elsewhere there still linger a number of unregenerate and semi-regenerate isolationists. Their influence at a critical moment should not be discounted But a more insidious danger to international co-operation is the continuing growth of the American state structure itself

As far back as 1920, Franklin K Lane, then Secretary of the Interior, recognized that "if not only nationals but States themselves, represented by governments, take part in economic competition, and turn themselves into business houses or manufacturing firms, there is no hope of appeasing the conflicts which will constantly arise from commercial rivalry '

A strongly centralized government cannot help seeking by every means in its power to enhance its own sovereignty Whether the State is protecting its subjects from the incursions of Tunisian pirates, or establishing tariff barriers for the protection of infant industries, or channeling exports into its own ships, or supporting farm prices, or devaluing its currency, it feeds and grows on the services it performs A powerful State is no more eager to subordinate itself to international law than a chinchilla is to become part of a fur coat

Nor is the fight between immediate local interests and ultimate world interests an easy one to resolve The U S of today, for instance, has developed by trial and error an impressive and

far-sighted foreign policy. Yet even now the administration feels obliged to spend in the neighborhood of a billion dollars a year to support farm prices, which implies uneconomic import restrictions—as in the cases of butter, wool, sugar, wheat, cotton—and willingness to dump our surplus abroad. Dumping does not bolster international amity. Instead, as John Davenport observed in *Fortune* magazine, "It makes nonsense of the Administration's whole reciprocal-trade and low-tariff policies, and the lip service that is given to promoting world trade."

It is by no means a foregone conclusion that this country, given a domestic crisis, will turn its back on the rest of the world. But the temptation to cut our foreign commitments will be strong. Indeed, it is on the persuasive power of that temptation that Russia seems to have gambled much of her postwar foreign policy.

Already such opinion makers as Henry Hazlitt, writing in *Newsweek*, are urging us down the path foreseen by the Kremlin. The Bold New Program, which can be one of the most telling blows ever delivered against expanding Communism, is credited by Hazlitt to Earl Browder and the Communist Party. He complains that "Every million dollars of capital we send abroad sets back our own capital development by just that much."

In the event of a real depression there will be others to argue, perhaps more plausibly, for a self-contained and self-centered America. It will be pointed out that we are not a nation at all but a continent—nay, a hemisphere. We need not sell our surplus abroad, because we can dispose of it to our own people through TVAs, stamp plans, housing, social security, medical insurance, and a thousand and one vast governmental developments. It will be argued that economically the eastern world, with its troublesome Russia, its starving millions, its wars and threats of war, is not a necessity to us. It is simply a nuisance.

It will be contended, with evidence, that if tomorrow the earth were to shudder, twist, and finally wrench apart like a giant amoeba, the eastern half careening off into space and the

this venture in good neighborliness a hastily daubed-on war-paint, serving to impress ourselves and others while we do battle with the Russian bear? Once the bear is no longer a threat, how strong will be the impulse to wash our faces and disappear with a sigh of relief into the tent where we have not only lived but lived fatly for so many generations?

It is doubtless true, as Winston Churchill says, that "under the impact of Communism all of the free nations are being welded together as they never have been before, and never could be, but for the harsh external pressure to which they are being subjected." But coalitions based simply on fear ordinarily break up when the fear is at an end, unless the interim has been used for wise and permanent building, and no small part of that building must take place in the minds of men

On Capitol Hill and elsewhere there still linger a number of unregenerate and semi-regenerate isolationists Their influence at a critical moment should not be discounted But a more insidious danger to international co-operation is the continuing growth of the American state structure itself

As far back as 1920, Franklin K. Lane, then Secretary of the Interior, recognized that "if not only nationals but States themselves, represented by governments, take part in economic competition, and turn themselves into business houses or manufacturing firms, there is no hope of appeasing the conflicts which will constantly arise from commercial rivalry"

A strongly centralized government cannot help seeking by every means in its power to enhance its own sovereignty Whether the State is protecting its subjects from the incursions of Tunisian pirates, or establishing tariff barriers for the protection of infant industries, or channeling exports into its own ships, or supporting farm prices, or devaluing its currency, it feeds and grows on the services it performs A powerful State is no more eager to subordinate itself to international law than a chinchilla is to become part of a fur coat

Nor is the fight between immediate local interests and ultimate world interests an easy one to resolve The U S of today for instance, has developed by trial and error an impressive and

far-sighted foreign policy. Yet even now the administration feels obliged to spend in the neighborhood of a billion dollars a year to support farm prices, which implies uneconomic import restrictions—as in the cases of butter, wool, sugar, wheat, cotton—and willingness to dump our surplus abroad. Dumping does not bolster international amity. Instead, as John Davenport observed in *Fortune* magazine, "It makes nonsense of the Administration's whole reciprocal-trade and low-tariff policies, and the lip service that is given to promoting world trade."

It is by no means a foregone conclusion that this country, given a domestic crisis, will turn its back on the rest of the world. But the temptation to cut our foreign commitments will be strong. Indeed, it is on the persuasive power of that temptation that Russia seems to have gambled much of her postwar foreign policy.

Already such opinion makers as Henry Hazlitt, writing in *Newsweek*, are urging us down the path foreseen by the Kremlin. The Bold New Program, which can be one of the most telling blows ever delivered against expanding Communism, is credited by Hazlitt to Earl Browder and the Communist Party. He complains that "Every million dollars of capital we send abroad sets back our own capital development by just that much."

In the event of a real depression there will be others to argue, perhaps more plausibly, for a self-contained and self-centered America. It will be pointed out that we are not a nation at all but a continent—nay, a hemisphere. We need not sell our surplus abroad, because we can dispose of it to our own people through TVAs, stamp plans, housing, social security, medical insurance, and a thousand and one vast governmental developments. It will be argued that economically the eastern world, with its troublesome Russia, its starving millions, its wars and threats of war, is not a necessity to us. It is simply a nuisance.

It will be contended, with evidence, that if tomorrow the earth were to shudder, twist, and finally wrench apart like a giant amoeba, the eastern half careening off into space and the

western half continuing to spin undamaged around the sun—if that were to happen, we should have lost no physical thing that we cannot do without.

No man knows when the situation may arise which forces us to demonstrate once for all whether we are a reliable segment of the comity of nations. But the decision which will be revealed then is being made now, in the day-to-day thinking of 150,000,000 Americans. Being human, we are selfish The chances are that if we were really convinced we could once again survive and prosper by ourselves, taking no part in the troubles of Europe, Africa, and Asia, we would set up our own iron curtain, whatever the cost to the rest of the world Let us see, then, what the outlook for a self-contained America would be.

The United States is foremost among nations in the production and consumption of agricultural and mineral wealth. We have within our borders, or near at hand, the great majority of the minerals and plants which are necessary for the kind of life to which we have become accustomed

Indeed, in many fields we have only begun to exploit our domestic resources. The Department of Agriculture *Yearbook* reported in 1938 that by modern methods we could farm without damage twice as much land as was then actually under cultivation. During the war we added 30,000,000 acres to our crop land and increased our food production by a third It has been estimated that improved crop and livestock practices will increase our food supply another 20 per cent by 1954. That does not sound as if we need the eastern hemisphere.

In the eighty years between 1861 and 1941, Americans created the most tremendous industrial system the world had ever seen. In the next four years they doubled the productivity of that system. That does not sound as if we need the eastern hemisphere.

Of the ores we lack, most are available in our own half of the world. Antimony—for ball bearings, bullets, and batteries—comes from Peru, Mexico, and Bolivia; bauxite, a basic part of aluminum, from British and Dutch Guiana; copper from Chile,

Peru, and Cuba; platinum from Canada and Colombia; tin, without which automobile, airplane, railroad, and ship transportation would cease, from Bolivia; tungsten from Bolivia and Peru. Manganese has recently been discovered in quantity in Brazil, while low-grade deposits exist in most of our western states. Even cobalt and chromite exist, though apparently in inadequate quantities, in the state of Idaho

Most of the essential agricultural products which will not grow within the borders of the territorial United States are plentiful to the south of us Bananas, coffee, tea, camphor, tropical oils, sisal, quinine are all products of Latin America. Scientists today are seeking means of synthesizing or finding substitutes for other plant growths, as has already been done for such key imports as rubber They are also seeking ways of growing these tropical products within the United States proper. Bananas may yet shade your apartment house roof.

How would a self-contained economy be catalyzed? How would we keep living standards and consumer demand spiraling upward along with our productive capacity? The blueprints call for more and more planning and spending, with government, industry, labor, and agriculture working as a team. Some examples [1]

1. In the United States today there are 7,500,000 dwelling units so run down and so unwholesome that they are below reasonable standards of health and safety To replace them with homes of minimum decency would cost $50,000,000,000, expended perhaps over a half a century and providing work for hundreds of thousands of men

2. More than 300,000,000 acres of crop and pasture lands, if they are to be saved, must be protected against further erosion. The job could be done for $4,500,000,000

3. To retire 11,500,000 acres of submarginal land, resettling 500,000 farm families who now live on them, would take $500,000,000

4. There are 21,000,000 acres under irrigation in the west.

[1] Figures from *America's Needs and Resources* (New York Twentieth Century Fund 1947)

western half continuing to spin undamaged around the sun—if that were to happen, we should have lost no physical thing that we cannot do without.

No man knows when the situation may arise which forces us to demonstrate once for all whether we are a reliable segment of the comity of nations. But the decision which will be revealed then is being made now, in the day-to-day thinking of 150,000,000 Americans. Being human, we are selfish The chances are that if we were really convinced we could once again survive and prosper by ourselves, taking no part in the troubles of Europe, Africa, and Asia, we would set up our own iron curtain, whatever the cost to the rest of the world Let us see, then, what the outlook for a self-contained America would be.

The United States is foremost among nations in the production and consumption of agricultural and mineral wealth. We have within our borders, or near at hand, the great majority of the minerals and plants which are necessary for the kind of life to which we have become accustomed

Indeed, in many fields we have only begun to exploit our domestic resources. The Department of Agriculture *Yearbook* reported in 1938 that by modern methods we could farm without damage twice as much land as was then actually under cultivation. During the war we added 30,000,000 acres to our crop land and increased our food production by a third It has been estimated that improved crop and livestock practices will increase our food supply another 20 per cent by 1954. That does not sound as if we need the eastern hemisphere

In the eighty years between 1861 and 1941, Americans created the most tremendous industrial system the world had ever seen. In the next four years they doubled the productivity of that system. That does not sound as if we need the eastern hemisphere.

Of the ores we lack, most are available in our own half of the world. Antimony—for ball bearings, bullets, and batteries—comes from Peru, Mexico, and Bolivia; bauxite, a basic part of aluminum, from British and Dutch Guiana; copper from Chile,

a part of our natural defense sphere But it is not demonstrable that the United States could prevent a foreign power, in the event of war, from establishing bases in Latin America and making impossible or extremely hazardous the massive northward movement of mineral and agricultural products. Even the northern reaches of Canada, where some key mineral reserves (including uranium) are located, are by no means immune from attack.

The only way that the United States could make reasonably sure of holding onto Latin American reserves, in the event of a war in which the western hemisphere stood alone against the East, would be to occupy Latin America now The coin of isolationism thus has the head of Caesar stamped on the other side.

Left to our own resources, we should be consuming our mineral patrimony at a prodigious rate each day, with no faintest possibility of ever replacing it In the past fifty years the United States alone has produced—which means we have consumed—more minerals than the whole world had used prior to that time. Those minerals are gone forever. High-grade iron supplies are shrinking In 1949 the Bureau of Mines estimated that high-grade copper would last thirty-four years, zinc nineteen years, cadmium sixteen years, lead twelve. We have less than a five-year supply of antimony, tungsten, platinum, mercury.

Vast as our resources once were, we could not have reached our present industrial stature without key materials from the East. Chromite, essential for alloy steels used in the oil and chemical industries, comes from Russia, Turkey, or Southern Rhodesia. For cobalt, we are still dependent on the Belgian Congo, Northern Rhodesia, and French Morocco.

Some 67 per cent of our imports today are raw materials needed to keep our industries going. A minute quantity of imported materials not infrequently supports an immense industry. Twelve large food concerns employing 500,000 men and women, for instance, rely each year on a mere $15,000,000 worth of spices from abroad.

Elmer W. Pehrson, Chief Statistician of the Bureau of Mines, asserts that if we consider a generation an average period be-

per cent more food than we consume. We must either make ourselves eat it, stop growing it, destroy it, or send it abroad.

Even before the great depression we sold abroad more than half of our cotton, a fifth of our wheat, two-fifths of our tobacco, a third of our lard, a sixth of our apples, two-fifths of our dried fruits, a fifth of our canned fruits, a quarter of our agricultural machinery. We exported 40 per cent of our typewriters, 30 per cent of our printing machinery, 14 per cent of our automobiles. In some instances we export a higher percentage today.

The recent increase in our industrial capacity and our farm production has come, moreover, far faster than we have shifted in social and economic habits to absorb it. We have planted more acres and built more factories not only because of demand here at home, but because of calls from abroad. Some day we may be able to consume all we can make, but a great growth must take place in American buying power before that day comes.

Some of the largest industries in the United States today are able to produce on a mass basis only because of the margin represented by the export market. Without that margin—even forgetting the need for foreign raw materials—the price of automobiles, radios, refrigerators, and a thousand other products would be too high for most of us to afford. If the South could not export cotton, it could buy less domestic goods. If millions of farmers were not shipping their produce abroad, they could buy fewer harrows and threshing machines.

In 1949 our steel production was up 12 per cent over prewar levels. We were putting out half again as many shoes, twice as much farm machinery and plumbing and heating equipment. As productivity increases, so does the need for exports.

If our exports were to cease, there would be a cataclysmic decline in mass-production industries employing millions of workers. Their unemployment would cut purchasing power, start the deflationary toboggan which is the nightmare of present-day American business. Exports represent the margin between prosperity and depression.

per cent more food than we consume. We must either make ourselves eat it, stop growing it, destroy it, or send it abroad.

Even before the great depression we sold abroad more than half of our cotton, a fifth of our wheat, two-fifths of our tobacco, a third of our lard, a sixth of our apples, two-fifths of our dried fruits, a fifth of our canned fruits, a quarter of our agricultural machinery. We exported 40 per cent of our typewriters, 30 per cent of our printing machinery, 14 per cent of our automobiles. In some instances we export a higher percentage today.

The recent increase in our industrial capacity and our farm production has come, moreover, far faster than we have shifted in social and economic habits to absorb it We have planted more acres and built more factories not only because of demand here at home, but because of calls from abroad Some day we may be able to consume all we can make, but a great growth must take place in American buying power before that day comes.

Some of the largest industries in the United States today are able to produce on a mass basis only because of the margin represented by the export market. Without that margin—even forgetting the need for foreign raw materials—the price of automobiles, radios, refrigerators, and a thousand other products would be too high for most of us to afford If the South could not export cotton, it could buy less domestic goods. If millions of farmers were not shipping their produce abroad, they could buy fewer harrows and threshing machines

In 1949 our steel production was up 12 per cent over prewar levels We were putting out half again as many shoes, twice as much farm machinery and plumbing and heating equipment. As productivity increases, so does the need for exports.

If our exports were to cease, there would be a cataclysmic decline in mass-production industries employing millions of workers. Their unemployment would cut purchasing power, start the deflationary toboggan which is the nightmare of present-day American business. Exports represent the margin between prosperity and depression.

To have exports there must be imports too. We cannot forever give or lend the dollars which will be used to buy American goods. Those dollars must be earned.

Between 1914 and 1949, according to a study by the European Co-operation Administration, our "favorable trade balance"—the excess in dollar value of the goods we sold abroad over the goods we imported—amounted to $101,000,000,000 But in the same period the U. S. Government sent $68,000,000,000 abroad in grants and loans—now largely in default; private individuals sent $10,500,000,000; business invested the same amount; $15,-500,000,000 of foreign dollar assets in this country were liquidated, and the World Bank loaned $1,000,000,000. In other words, American taxpayers and businessmen have unwittingly financed the excess of American exports over imports.

It has been charged that imports threaten our own domestic production, that highly paid American workers cannot compete with cheaper labor abroad.

Actually, on the contrary, our labor is, in general, not only better trained, better housed, and better fed but far more productive than any other in the world. Even before the war our factory workers put out twice as much per man as those, for instance, of Great Britain, our every miner dug four times as much, our utilities and communications workers had twice the efficiency. The fact that for seventy-five years we have sent out more goods than we have taken in, however it may reflect on our good sense, certainly demonstrates our quality as competitors.

It may seem anti-climactic to sum up the dangers of a self-contained economy in terms of the personal inconveniences which would stem from it.

One man's petty inconvenience multiplied by 150,000,000, however, can have national disaster as its product.

Take the unhappy situation of a purely imaginary couple named Peabody, who live in Pittsburgh because Jim is puddler in a steel mill there.

Jim Peabody has a deplorable habit. He likes a smoke before he gets up in the morning. Not many months after the eastern

hemisphere has plunged off through the heavens he reaches across to his nightstand, lights a cigarette, puffs once, and hurls it angrily out the window. It is flat, stale, and profitless. Indeed, its all-domestic tobacco tastes much like straw. Mr. Peabody can remember cigarettes composed 10 per cent of tobaccos from Greece, Turkey, and Syria, and flavored with materials from 57 countries.

Mrs. Peabody is an attractive woman To stay that way she has found it advisable to treat her skin with certain unguents which preserve its freshness, and to touch her lips lightly with coloring before she presents herself to the world Alas, Mrs Peabody's cold cream jar is empty this morning, and her rouge cakes on her lips, their key elements are on the sundered eastern half of the globe, making the acquaintance of the Milky Way.

Neither Mr. nor Mrs. Peabody is in the best of spirits at the breakfast table Mrs Peabody is accustomed to tea at breakfast, but there is no tea nearer than India Mr. Peabody has his coffee and sugar, but he is oppressed by the dreadful suspicion that if Europe and Asia have broken away there is no reason to assume that Brazil and Cuba will not follow

The mill where Mr Peabody works has shut down—temporarily, he hopes—for lack of alloy metals High-grade steel uses 40 different raw materials originating in more than 50 different countries

Peabody wanders into the living room, throws himself into a chair, and snaps on the radio, forgetting that it has broken down for lack of mica crystals, also from India

Instead of hearing the morning news, he listens to his wife. She is complaining bitterly, nowhere in town can she find decent gloves or handbags The needed kidskins came from India, the lambskins from South Africa and Australia And if Brazil flies off into space as Mr Peabody dourly forebodes, there will be no pigskin for shoes either Of course, Washington may establish its own, government-operated pigskin business. Mr. Peabody wonders whether he will be among those drafted to skin the pigs

For weeks now, Mrs. Peabody has been under the doctor's

hemisphere has plunged off through the heavens he reaches across to his nightstand, lights a cigarette, puffs once, and hurls it angrily out the window. It is flat, stale, and profitless. Indeed, its all-domestic tobacco tastes much like straw. Mr. Peabody can remember cigarettes composed 10 per cent of tobaccos from Greece, Turkey, and Syria, and flavored with materials from 57 countries.

Mrs Peabody is an attractive woman. To stay that way she has found it advisable to treat her skin with certain unguents which preserve its freshness, and to touch her lips lightly with coloring before she presents herself to the world Alas, Mrs. Peabody's cold cream jar is empty this morning, and her rouge cakes on her lips, their key elements are on the sundered eastern half of the globe, making the acquaintance of the Milky Way

Neither Mr. nor Mrs Peabody is in the best of spirits at the breakfast table Mrs Peabody is accustomed to tea at breakfast, but there is no tea nearer than India Mr Peabody has his coffee and sugar, but he is oppressed by the dreadful suspicion that if Europe and Asia have broken away there is no reason to assume that Brazil and Cuba will not follow

The mill where Mr Peabody works has shut down—temporarily, he hopes—for lack of alloy metals High-grade steel uses 40 different raw materials originating in more than 50 different countries.

Peabody wanders into the living room, throws himself into a chair, and snaps on the radio, forgetting that it has broken down for lack of mica crystals, also from India

Instead of hearing the morning news, he listens to his wife. She is complaining bitterly, nowhere in town can she find decent gloves or handbags The needed kidskins came from India, the lambskins from South Africa and Australia. And if Brazil flies off into space as Mr Peabody dourly forebodes, there will be no pigskin for shoes either. Of course, Washington may establish its own, government-operated pigskin business. Mr. Peabody wonders whether he will be among those drafted to skin the pigs.

For weeks now, Mrs Peabody has been under the doctor's

care. Her prescription has run out, and she cannot telephone to have it refilled—the Peabodys have no telephone because the company cannot get mica from India to make new sets.

So Mr. Peabody goes out for the medicine. In the yard, he scowls at his house; it is becoming shabby Paint is unavailable for lack of tung oil from China, shellac from India, mineral pigments from France.

He considers taking the car, but decides to walk instead. Gasoline is expensive these days, being either hauled from South America or manufactured from coal and shale to protect remaining reserves at home. Besides, 31 of the raw materials that went into his car—not counting the steel—originated abroad. Where will a new car come from when his is worn out?

To top off his frustration, Mr Peabody finds that the druggist no longer has his prescription in stock. Its ingredients are East Indian and Chinese.

Now, the inconveniences besetting the Peabodys are trivial But the country is composed of a great many Peabodys, and the total of their lacks and hungers will determine the road along which America moves into the future When Jim Peabody steps onto the sidewalk from the drug store, and finds police piling out of a squad car to make another of their hopeless raids on the booming black market, there is nothing trivial about the fact *that he has to explain his presence in the drug store, produce* a government identity card, tell where he was born and where he works. That means that Jim Peabody, American citizen and proud of it, is turning into A37965x22, subject of the State. Nor is there anything trivial about the announcement from the government loudspeaking system which dins into his ears as he starts home—an announcement that Canada has been given twenty-four hours to *reconsider her refusal* to grant our perfectly justified demand for free access to her uranium deposits

Put enough personal inconveniences together and you have slavery—and war.

If America were to be alone in the world tomorrow, her most vital industries could survive only by massive government sup-

port, carrying with it the likelihood of ultimate government ownership. Efficiency would drop, costs would rise; private enterprise would wither. The economy could continue to move only by pouring government billions into valley authorities, federal housing projects, state medical aid, increased social security, Civilian Conservation Corps. Estimable though many of these enterprises may be, if applied in a lump they would certainly subject the individual to increasing government intervention in his everyday affairs. The average American is more likely to welcome government enterprises as encouragement toward a better life and a stabilizer in times of trouble than as the indispensable *mainspring* of our economy.

But we could not be alone. Other nations would still exist. And to shut out an outside world which is seeking desperately and persistently to break in would force controls of a still more severe sort. An autarchic government is by definition a tyrannic government. It takes tyranny to build a wall around a continent.

The United States was able to be isolationist for a hundred and twenty-five years only because we were part of an orderly world system, with someone else—England—doing most of the policing. Today *there is no longer an orderly world system,* and there is no nation with the possible exception of the United States which is capable of creating one. We can be isolationist only in a stable world, and there can be no stable world in which we are isolationist. It is a nice dilemma. To have any faintest chance of ever being able to mind our own business again, we must be willing to mind other people's business, and do so wholeheartedly, for a period of decades, generations, or centuries.

That is the short haul of isolationism. In the long haul the prospect becomes, if life is considered as a supreme good, considerably grimmer. It involves not only serfdom but destruction.

Even if Russia should become miraculously a nation of doves, any major attempt at economic self-sufficiency on the part of the United States would be an invitation to war. For the conditions

care Her prescription has run out, and she cannot telephone to have it refilled—the Peabodys have no telephone because the company cannot get mica from India to make new sets.

So Mr Peabody goes out for the medicine. In the yard, he scowls at his house, it is becoming shabby Paint is unavailable for lack of tung oil from China, shellac from India, mineral pigments from France

He considers taking the car, but decides to walk instead Gasoline is expensive these days, being either hauled from South America or manufactured from coal and shale to protect remaining reserves at home Besides 31 of the raw materials that went into his car—not counting the steel—originated abroad. Where will a new car come from when his is worn out?

To top off his frustration, Mr Peabody finds that the druggist no longer has his prescription in stock Its ingredients are East Indian and Chinese

Now, the inconveniences besetting the Peabodys are trivial But the country is composed of a great many Peabodys, and the total of their lacks and hungers will determine the road along which America moves into the future When Jim Peabody steps onto the sidewalk from the drug store, and finds police piling out of a squad car to make another of their hopeless raids on the booming black market, there is nothing trivial about the fact that he has to explain his presence in the drug store, produce a government identity card, tell where he was born and where he works That means that Jim Peabody, American citizen and proud of it, is turning into A37965x22, subject of the State. Nor is there anything trivial about the announcement from the government loudspeaking system which dins into his ears as he starts home—an announcement that Canada has been given twenty-four hours to reconsider her refusal to grant our perfectly justified demand for free access to her uranium deposits

Put enough personal inconveniences together and you have slavery—and war.

If America were to be alone in the world tomorrow, her most vital industries could survive only by massive government sup-

days, but we may not turn back. For if today it takes a free and prosperous America to save the world, *tomorrow only a free and prosperous world can save America.*

3

Industrialize — or Starve

PERHAPS THE most powerful ally of those Americans who would leave the old world to stew in its own juice is a dead English clergyman named Malthus. It was Malthus who calculated one hundred and fifty years ago that mankind would always outgrow its food supply, and that pestilence, famine, and war would be required to redress the balance.

To a Malthusian, food or money invested in an undernourished land only adds to its sorrows. The more food men have, the more they will breed, the more they breed, the more mouths there will be for *each* mouthful, the more mouths there are, the more mouths will remain unfilled. Food equates with starvation.

These fears are buttressed by the fact that humanity has quintupled its numbers since the seventeenth century, that it has doubled them in the past one hundred years, and that it has increased by almost 200,000,000 in a decade. At this rate, runs the lament, there will be 4,500,000,000 people on our planet early in the twenty-first century—and even now more than 20,000,000 die of hunger each year.

To share our resources with an old world that is sinking hopelessly into Malthusian quicksand would be wastefulness at best, criminal folly at worst. In such a context, business investments, government loans or grants, even personal charities compound the evil they seek to lessen. Marshall Plans, international banks, compacts for freer trade—any and every effort at international co-operation loses its excuse for being. Instead, America's obligation is to husband her resources and prepare herself as best she may for the coming Armageddon.

So the extreme Malthusians. At the opposite pole stand those who insist that the productivity of earth is limitless; that man,

that exist today in two-thirds of the world create a climate where war thrives Russia or no Russia, where there is misery there will be Communists or some equivalent. Without guidance and friendly aid from the United States, half of mankind today might well be pledging allegiance to the hammer and sickle Our aid and understanding will still be needed for many decades to come.

It would be pleasant to think that by relieving ourselves of foreign commitments we could devote our energies to exploiting, conserving, and enlarging the resources of our own country. But the surest way to reverse past progress would be to turn our backs on the rest of the world By our own act we should have turned today's allies into tomorrow's enemies. Our entire product over and above the minimum needed to sustain life would be required for engines of war We should have to live in chain mail.

On an earth that has shrunk under our eyes to the size of a fist, isolationism is not simply inadvisable. It is impossible. If the world cannot unite with us, it will unite against us. If we flinch from intimacy with an eastern hemisphere of different features and faiths and philosophies, we shall be forced sooner or later into the ultimate intimacy—the intimacy of body against body in deathly combat, and germ against germ, and bomb against bomb.

The alternate road is not a simple one. It means working patiently and persistently for freer trade, even where our own manufacturers and workmen and farmers must pay some part of the first cost; co-operating with other nations even when we cannot always co-operate on our own terms, spending sizable sums of money abroad which could very conveniently be spent at home; creating industrial complexes in other lands which not only may but are certain some day to compete with our own products; subordinating our own immediate self-interest in order that we may expect others to subordinate theirs.

We may look back wistfully toward the good old isolationist

days, but we may not turn back For if today it takes a free and prosperous America to save the world, tomorrow only a free and prosperous world can save America.

3

Industrialize — or Starve

PERHAPS THE most powerful ally of those Americans who would leave the old world to stew in its own juice is a dead English clergyman named Malthus It was Malthus who calculated one hundred and fifty years ago that mankind would always outgrow its food supply, and that pestilence, famine, and war would be required to redress the balance

To a Malthusian, food or money invested in an undernourished land only adds to its sorrows The more food men have, the more they will breed, the more they breed, the more mouths there will be for each mouthful, the more mouths there are, the more mouths will remain unfilled Food equates with starvation

These fears are buttressed by the fact that humanity has quintupled its numbers since the seventeenth century, that it ha doubled them in the past one hundred years and that it ha increased by almost 200 000,000 in a decade At this rate, run the lament, there will be 4,500,000,000 people on our plant early in the twenty-first century—and even now more than 20 000,000 die of hunger each year

To share our resources with an old world that is sinking hop lessly into Malthusian quicksand would be wastefulness at bes criminal folly at worst In such a context, business investmen government loans or grants, even personal charities compou the evil they seek to lessen Marshall Plans, international ban compacts for freer trade—any and every effort at internatio co-operation loses its excuse for being Instead, America s ob gation is to husband her resources and prepare herself as best s may for the coming Armageddon

So the extreme Malthusians At the opposite pole stand th who insist that the productivity of earth is limitless, that m

that exist today in two-thirds of the world create a climate where war thrives. Russia or no Russia, where there is misery there will be Communists or some equivalent. Without guidance and friendly aid from the United States, half of mankind today might well be pledging allegiance to the hammer and sickle Our aid and understanding will still be needed for many decades to come.

It would be pleasant to think that by relieving ourselves of foreign commitments we could devote our energies to exploiting, conserving, and enlarging the resources of our own country. But the surest way to reverse past progress would be to turn our backs on the rest of the world By our own act we should have turned today's allies into tomorrow's enemies. Our entire product over and above the minimum needed to sustain life would be required for engines of war. We should have to live in chain mail.

On an earth that has shrunk under our eyes to the size of a fist, isolationism is not simply inadvisable. It is impossible. If the world cannot unite with us, it will unite against us. If we flinch from intimacy with an eastern hemisphere of different features and faiths and philosophies, we shall be forced sooner or later into the ultimate intimacy—the intimacy of body against body in deathly combat, and germ against germ, and bomb against bomb.

The alternate road is not a simple one. It means working patiently and persistently for freer trade, even where our own manufacturers and workmen and farmers must pay some part of the first cost; co-operating with other nations even when we cannot always co-operate on our own terms, spending sizable sums of money abroad which could very conveniently be spent at home; creating industrial complexes in other lands which not only may but are certain some day to compete with our own products; subordinating our own immediate self-interest in order that we may expect others to subordinate theirs.

We may look back wistfully toward the good old isolationist

Balanced production and consumption, however, are dreams of the distant future. Accepting today's habit patterns, simply to feed adequately our present world population would require 50 per cent more food than we have.

Do the 7,000,000 square miles now under cultivation have such an increase in them?

Kirtley F. Mather, head of the geology department at Harvard and a leading student of world resources, says yes. Fast as population has grown during the past twenty-five years, he points out, the means of subsistence has grown faster. Land in the United States which grew but 60 bushels of corn per acre in 1900 can grow 100 bushels by using today's improved seed. The best wheat seed fifty years ago produced less than half as much as the best seed now available in the United States Today American farms average 17 9 bushels of wheat per acre, but one farm has reached a peak of 74.5 bushels Russia has announced—without confirmation—development of a winter wheat which yields over 120 bushels an acre.

Mather estimates that by applying generally techniques which already have proved their worth, the present output of American farms can be doubled and perhaps quadrupled.

Fertilizers, soil conservation, pest killers, and improved plant strains are among the major tools being currently used to increase crop production in the United States

The effect of fertilizers was demonstrated by a TVA experiment on 42,000 farms occupying 6,000,000 acres. The farmers added neither machinery nor man power By stepping up their use of mineral plant foods, they obtained a 30 per cent rise in the production of meat, eggs, and dairy products over the entire area. Where the fertilizer was spread most thickly the crop yield increased 60 per cent

Since plants can suffer from hidden hunger just as humans can, not only the great basic plant foods but tiny samplings of other less obvious ingredients must be included in fertilizers Fortunately, most of the 20 different elements needed for proper manuring of the soil are available in virtually limitless quan-

simply by applying the knowledge he already possesses, soon will be more worried about reducing his paunch than he is now about reducing his numbers.

Must population outrun food supply? If so, let America hoard her food and prime her guns

Will technical ingenuity inevitably produce all the food that mankind can consume? If so, let us dismiss the present hunger of two-thirds of the world as a passing nuisance, and return to our worry about the price of steaks.

Or is the race between population and food supply in underdeveloped areas perhaps not a law of nature at all but rather a symptom of retarded social and economic systems? And if so, is there an effective means of helping those retarded systems to catch up with the rest of the world?

How much more food can our present crop lands produce?

Today the tillers of earth cultivate some 7,000,000 square miles—about 4,000,000,000 acres They wring from those acres enough food to keep most of us going; but they would need to harvest nearly half again as much, *in present proportions*, if all alive were to eat well.

If the proportions of one crop to another were changed, however, many nutritionists believe that starvation and undernourishment might be relieved even with present production. The amount of food man must eat to be well fed depends on the kind of food it is

During the war, for instance, the Friends wished to send a shipload of food to Europe. They asked a scientist at the Massachusetts Institute of Technology how the load should be divided among wheat, peanut oil, and other products to get the greatest possible amount of nutrition into the available space. The scientist spent a week-end figuring He discovered that by proper combination he could increase the food value 50 per cent above that of most shipments of comparable tonnage.

If all the world's crops were similarly balanced, our immediate food deficit might vanish without the addition of a *single* pound of food to the over-all supply.

Balanced production and consumption, however, are dreams of the distant future. Accepting today's habit patterns, simply to feed adequately our present world population would require 50 per cent more food than we have.

Do the 7,000,000 square miles now under cultivation have such an increase in them?

Kirtley F. Mather, head of the geology department at Harvard and a leading student of world resources, says yes. Fast as population has grown during the past twenty-five years, he points out, the means of subsistence has grown faster. Land in the United States which grew but 60 bushels of corn per acre in 1900 can grow 100 bushels by using today's improved seed The best wheat seed fifty years ago produced less than half as much as the best seed now available in the United States. Today American farms average 17 9 bushels of wheat per acre, but one farm has reached a peak of 74 5 bushels. Russia has announced—*without confirmation*—*development of a winter* wheat which yields over 120 bushels an acre.

Mather estimates that by applying generally techniques which already have proved their worth, the present output of American farms can be doubled and perhaps quadrupled

Fertilizers, soil conservation, pest killers, and improved plant strains are among the major tools being currently used to increase crop production in the United States

The effect of fertilizers was demonstrated by a TVA experiment on 42,000 farms occupying 6,000,000 acres. The farmers added neither machinery nor man power. By stepping up their use of mineral plant foods, they obtained a 30 per cent rise in the production of meat, eggs, and dairy products over the entire area Where the fertilizer was spread most thickly the crop yield increased 60 per cent

Since plants can suffer from hidden hunger just as humans can, not only the great basic plant foods but tiny samplings of other less obvious ingredients must be included in fertilizers. Fortunately, most of the 20 different elements needed for proper manuring of the soil are available in virtually limitless quan-

simply by applying the knowledge he already possesses, soon will be more worried about reducing his paunch than he is now about reducing his numbers.

Must population outrun food supply? If so, let America hoard her food and prime her guns.

Will technical ingenuity inevitably produce all the food that mankind can consume? If so, let us dismiss the present hunger of two-thirds of the world as a passing nuisance, and return to our worry about the price of steaks.

Or is the race between population and food supply in underdeveloped areas perhaps not a law of nature at all but rather a symptom of retarded social and economic systems? And if so, is there an effective means of helping those retarded systems to catch up with the rest of the world?

How much more food can our present crop lands produce?

Today the tillers of earth cultivate some 7,000,000 square miles—about 4,000,000,000 acres. They wring from those acres enough food to keep most of us going; but they would need to harvest nearly half again as much, *in present proportions*, if all alive were to eat well.

If the proportions of one crop to another were changed, however, many nutritionists believe that starvation and undernourishment might be relieved even with present production. The amount of food man must eat to be well fed depends on the kind of food it is.

During the war, for instance, the Friends wished to send a shipload of food to Europe. They asked a scientist at the Massachusetts Institute of Technology how the load should be divided among wheat, peanut oil, and other products to get the greatest possible amount of nutrition into the available space. The scientist spent a week-end figuring. He discovered that by proper combination he could increase the food value 50 per cent above that of most shipments of comparable tonnage.

If all the world's crops were similarly balanced, our immediate food deficit might vanish without the addition of a single pound of food to the over-all supply.

Balanced production and consumption, however, are dreams of the distant future. Accepting today's habit patterns, simply to feed adequately our present world population would require 50 per cent more food than we have.

Do the 7,000,000 square miles now under cultivation have such an increase in them?

Kirtley F. Mather, head of the geology department at Harvard and a leading student of world resources, says yes. Fast as population has grown during the past twenty-five years, he points out, the means of subsistence has grown faster. Land in the United States which grew but 60 bushels of corn per acre in 1900 can grow 100 bushels by using today's improved seed. The best wheat seed fifty years ago produced less than half as much as the best seed now available in the United States. Today American farms average 17.9 bushels of wheat per acre, but one farm has reached a peak of 74.5 bushels. Russia has announced—without confirmation—development of a winter wheat which yields over 120 bushels an acre.

Mather estimates that by applying generally techniques which already have proved their worth, the present output of American farms can be doubled and perhaps quadrupled.

Fertilizers, soil conservation, pest killers, and improved plant strains are among the major tools being currently used to increase crop production in the United States.

The effect of fertilizers was demonstrated by a TVA experiment on 42,000 farms occupying 6,000,000 acres. The farmers added neither machinery nor man power. By stepping up their use of mineral plant foods, they obtained a 30 per cent rise in the production of meat, eggs, and dairy products over the entire area. Where the fertilizer was spread most thickly the crop yield increased 60 per cent.

Since plants can suffer from hidden hunger just as humans can, not only the great basic plant foods but tiny samplings of other less obvious ingredients must be included in fertilizers. Fortunately, most of the 20 different elements needed for proper manuring of the soil are available in virtually limitless quan-

simply by applying the knowledge he already possesses, soon will be more worried about reducing his paunch than he is now about reducing his numbers

Must population outrun food supply? If so, let America hoard her food and prime her guns

Will technical ingenuity inevitably produce all the food that mankind can consume? If so, let us dismiss the present hunger of two-thirds of the world as a passing nuisance, and return to our worry about the price of steaks

Or is the race between population and food supply in underdeveloped areas perhaps not a law of nature at all but rather a symptom of retarded social and economic systems? And if so, is there an effective means of helping those retarded systems to catch up with the rest of the world?

How much more food can our present crop lands produce?

Today the tillers of earth cultivate some 7,000,000 square miles—about 4,000,000,000 acres They wring from those acres enough food to keep most of us going, but they would need to harvest nearly half again as much, *in present proportions*, if all alive were to eat well

If the proportions of one crop to another were changed, however, many nutritionists believe that starvation and undernourishment might be relieved even with present production. The amount of food man must eat to be well fed depends on the kind of food it is

During the war, for instance, the Friends wished to send a shipload of food to Europe They asked a scientist at the Massachusetts Institute of Technology how the load should be divided among wheat, peanut oil, and other products to get the greatest possible amount of nutrition into the available space. The scientist spent a week end figuring He discovered that by proper combination he could increase the food value 50 per cent above that of most shipments of comparable tonnage.

If all the world's crops were similarly balanced, our immediate food deficit might vanish without the addition of a single pound of food to the over-all supply.

tities. Nitrogen, for example, can be drawn from the air itself; phosphate rocks, plentiful in most parts of the earth, can be converted to fertilizer by simple pulverization or by treatment with acid; potassium and calcium are among the eight most plentiful elements in the earth's crust.

Earthworms, bacteriological life, even four-legged animals play their part in achieving nature's balance. In ridding earth of its pests, therefore, scientists proceed with caution. The weed killer 2, 4-D, for instance, has increased corn crops 25 per cent in test areas. It has been equally effective in accelerating sugar cane production. Yet 2, 4-D kills any broad-leafed plant, good or bad. Given a chance, it will strike down cotton or sweet potatoes as ruthlessly as weeds So scientists insist that 2, 4-D be used only according to doctor's orders

So too with DDT, the insecticide Insects destroy up to 15 per cent of American crops every year DDT, scattered over large areas by air, can cut this destruction in half. Used in conjunction with 2, 4-D it brought about an added production in 1949 of hundreds of millions of bushels of grain and corn, hundreds of millions of pounds of beef and milk But if the experts have their way DDT will henceforth be applied not indiscriminately but under careful scientific guidance to prevent injury to soil or crops.

A greater menace to crops than weeds or pests is erosion, which has destroyed and is destroying empires. Already it has wiped out a fifth of the crop land of the United States

Every year erosion is erasing $3,000,000,000 worth of irreplaceable American topsoil—the equivalent of 500,000 acres Russia, Africa, Asia, Australia, and South America are in no better case.

But though mankind has lost many battles against erosion, it may yet win the war. America's huge soil conservation program of the past fifteen years gives a glimpse of what can be accomplished. Hundreds of thousands of farmers have been taught to follow the contours of hills in plowing and to plant trees to hold water on steep slopes. In 1947 alone, conservation

But it is not enough that present crop areas, farmed by methods newly tested, can in theory generously feed the present population of the world. What are the possibilities of enlarging those areas to take care of the additional 500,000,000 who probably will swarm the earth in fifty years?

The earth has 52,000,000 square miles of land. Man cultivates only 7,000,000. Until recently it was generally assumed that not more than 2,000,000 additional square miles would ever be worth plowing. The remainder was either too poor, too subject to erosion, or too far from market.

Among some soil scientists that figure has undergone recent extensive revision. Estimates of the eventually cultivatable area of earth now range as high as 24,500,000 square miles—nearly half the land surface of the planet For any predictable future, such estimates are undoubtedly excessive. It is true, however, that modern techniques may turn yesterday's fringe land into tomorrow's rich crop maker.

At the present rate, American farmers are "making" more than 1,000,000 acres a year of crop land and pasture land. They have added nearly 40,000,000 acres, says H. H Wooten in *The Agricultural Situation*, in the past twenty-five years—during the very period when erosion was lessening our potential at a rate of 500,000 acres a year.

Much of the land-making has been done by mechanical equipment. To blast rocks, fell trees, and pull out stumps is no longer the work of months for sweating men and boys It has become the work of hours, with tractors and bulldozers doing the pushing and panting. In 1930 less than a sixth of the nation's 5,800,000 farms had tractors; today there are tractors on two-thirds of them. In countries like Britain the percentage of mechanization is even higher.

No less important is irrigation, which today is responsible for 150,000,000 acres of the world's crop area, 300,000,000 more acres can be brought to life by similar treatment.[1]

And the amount of land that may be redeemed by irrigation is

[1] The desalting of sea water, already accomplished on a small scale, may make irrigation of arid coastal stretches feasible within the next decade

infinitesimal when compared with the acreage that may be opened in tropical jungles by weed-killers and insecticides. A Department of Agriculture official asserts that nearly 5,000,000,000 untouched acres—more than all the present crop land on earth—could be profitably planted to cane, rice, and other tropic crops after chemical control of undergrowth

In the far north farm scientists have demonstrated that the growth cycle of grains can be speeded to fit into the briefer growing season—a discovery which opens 300,000,000 untouched acres to farming.

Just as it is technically possible, then, to feed all present-day humanity to repletion by turning tested methods loose on existing farm areas, so it is technically possible to take care of any immediately foreseeable increase in population by adding new acreage

But if the population keeps right on increasing, still other food sources will be needed Do they too exist?

Technically again—and the word should be underlined—they do, both on the land and in the sea On the land there are yeasts to supplement meat There is fodder to supplement seed. There is photosynthesis to increase the rate at which plants draw energy from the sun There is chemistry to turn wood into sugar. There are soilless farms Since plants thrive on carbon dioxide, it has even been suggested that the carbon dioxide which comes from the smoke of factory chimneys might be purified and piped into vast greenhouses to increase plant productivity.

At sea there are shoal waters that can be planted, and all the surface that can be sieved

Appetizing and nutritious foods grow unsuspected all around us. Still living Americans can remember, for instance, when a tomato was considered to be deadly poison Until a few years ago Americans had never heard of soybeans as a food—yet soybeans are ten to fifteen times richer than wheat flour in minerals, five to ten times richer in the principal B vitamins, four times richer in proteins. Multi-purpose meals based on soybeans have been produced by the thousand for as little as a nickel a meal

But it is not enough that present crop areas, farmed by methods newly tested, can in theory generously feed the present population of the world. What are the possibilities of enlarging those areas to take care of the additional 500,000,000 who probably will swarm the earth in fifty years?

The earth has 52,000,000 square miles of land. Man cultivates only 7,000,000. Until recently it was generally assumed that not more than 2,000,000 additional square miles would ever be worth plowing. The remainder was either too poor, too subject to erosion, or too far from market.

Among some soil scientists that figure has undergone recent extensive revision. Estimates of the eventually cultivatable area of earth now range as high as 24,500,000 square miles—nearly half the land surface of the planet. For any predictable future, such estimates are undoubtedly excessive. It is true, however, that modern techniques may turn yesterday's fringe land into tomorrow's rich crop maker.

At the present rate, American farmers are "making" more than 1,000,000 acres a year of crop land and pasture land. They have added nearly 40,000,000 acres, says H. H. Wooten in *The Agricultural Situation*, in the past twenty-five years—during the very period when erosion was lessening our potential at a rate of 500,000 acres a year.

Much of the land-making has been done by mechanical equipment. To blast rocks, fell trees, and pull out stumps is no longer the work of months for sweating men and boys. It has become the work of hours, with tractors and bulldozers doing the pushing and panting. In 1930 less than a sixth of the nation's 5,800,000 farms had tractors; today there are tractors on two-thirds of them. In countries like Britain the percentage of mechanization is even higher.

No less important is irrigation, which today is responsible for 150,000,000 acres of the world's crop area; 300,000,000 more acres can be brought to life by similar treatment.[1]

And the amount of land that may be redeemed by irrigation is

[1] The desalting of sea water, already accomplished on a small scale, may make irrigation of arid coastal stretches feasible within the next decade.

In Mexico, Massachusetts Institute of Technology scientists discovered recently that a native plant, malva—first cousin to the hollyhock—had more food value than any the Institute had ever analyzed. "Civilized" Mexicans had considered it a weed.

Yeast, equaling meat in proteins and exceeding it in vitamins, costs only a fraction as much. A 10-foot yeast vat will brew as much protein in ten days as a thousand acres of cattle pasture can produce in a year. The present sulphite waste from the manufacture of paper can be fermented into virtually limitless yeast protein.

Today the average crop gives but a part of its food potential to man. The nearly 7,000,000,000 bushels of rice harvested each year, for instance, yield only 75 per cent of their food value. That is now being changed. A processing method developed during the war by a young Persian-American named M. Yonan-Malek turns out rice with twice the vitamin value of the usual smooth, shiny kernel, by preserving the nutrition-filled bran which usual milling methods polish away. "Malekizing" is spreading like wildfire around the world. Its general adoption would raise the food content of rice 25 per cent, without the addition of a single new rice paddy.

Have you ever wondered why corn is good to eat but corn stalks are not? Agronomists have. Using processes similar to those which extract dry plasma from whole blood, they have succeeded in drawing the food value not only from the stalks of such plants as corn and wheat, but from grass and weeds as well. In an experiment at the Massachusetts Institute of Technology, six men lived solely on fodder extract for five weeks. They not only thrived, but professed reluctance to give up their diet at the end of the experimental period Dr. Robert S. Harris, director of the Nutritional Biochemistry Laboratories of the Massachusetts Institute of Technology, reports that mixtures developed from fodder can give complete, if unappetizing, nutrition for *$15 a person a year.*

In practice, of course, food essence of any sort is likely to be used not as a complete meal but as a filler to give added nutritive

value to other foods For full usefulness, food must be varied and appetizing as well as nutritious

The General Electric research chemist Eugene G. Rochow believes that through present chemical knowledge the world can support a population of 15,000,000,000—more than six times that of today—simply by growing more trees and converting the wood to sugar for human consumption

Twenty years ago any farmer would have laughed if he had been told he might some day grow crops without any soil at all. Yet pilot factories have demonstrated that in case of need we could build skyscraper farms where plants would grow in shallow tanks of nutrient solution The cost of course would be prohibitive for most staples It is to be hoped that such a recourse will never be forced upon us But it can be done

Any form of soil farming, say some agronomists, is both inefficient and primitive All highly evolved plants are self-limiting in growth Why not turn, asks Dr Edgar Taschdjian, professor of biological sciences at Loyola University, Chicago, to the simpler algae, which will grow forever if part of the crop is regularly removed to prevent overcrowding? A wheat plant will increase in organic matter about 15 per cent a day at the utmost until it reaches its maximum growth, some algae can grow over 350 per cent daily—and never stop

The breeding of algae for food in hydroponic tanks remains in the stage of theory A vast proven and virtually untapped source of food, however, is the sea It occupies 140,000,000 square miles, almost three times the whole land area of earth And every square mile bulges with life

The shoal waters of the sea s edge—only 5 per cent of the sea, yet as vast as the whole cultivated land acreage of the planet—can be planted to kelp, seaweed, and other edible ocean plants. For centuries the Tunisians have harvested seaweed as fodder for their camels It is part of the normal diet of many Chinese and Japanese

When the Norwegian anthropologist Thor Heyerdahl drifted from Peru to French Oceania on a raft in 1947, he took with him

value to other foods For full usefulness, food must be varied and appetizing as well as nutritious.

The General Electric research chemist Eugene G. Rochow believes that through present chemical knowledge the world can support a population of 15,000,000,000—more than six times that of today—simply by growing more trees and converting the wood to sugar for human consumption

Twenty years ago any farmer would have laughed if he had been told he might some day grow crops without any soil at all. Yet pilot factories have demonstrated that in case of need we could build skyscraper farms where plants would grow in shallow tanks of nutrient solution. The cost of course would be prohibitive for most staples It is to be hoped that such a recourse will never be forced upon us But it can be done

Any form of soil farming say some agronomists, is both inefficient and primitive All highly evolved plants are self-limiting in growth Why not turn, asks Dr Edgar Taschdjian, professor of biological sciences at Loyola University, Chicago, to the simpler algae which will grow forever if part of the crop is regularly removed to prevent overcrowding? A wheat plant will increase in organic matter about 15 per cent a day at the utmost until it reaches its maximum growth some algae can grow over 350 per cent daily—and never stop

The breeding of algae for food in hydroponic tanks remains in the stage of theory A vast proven and virtually untapped source of food however, is the sea It occupies 140,000,000 square miles almost three times the whole land area of earth. And every square mile bulges with life

The shoal waters of the sea's edge—only 5 per cent of the sea, yet as vast as the whole cultivated land acreage of the planet—can be planted to kelp seaweed and other edible ocean plants. For centuries the Tunisians have harvested seaweed as fodder for their camels It is part of the normal diet of many Chinese and Japanese

When the Norwegian anthropologist Thor Heyerdahl drifted from Peru to French Oceania on a raft in 1947, he took with him

will tend to decline. As educational and living standards rise, as contraceptive knowledge spreads, birth rates drop.

The more comfortably man lives and the more hope he has for improving the lot of his children, the more slowly he breeds. In the fifty years between 1876 and 1936 the birth rate of western Europe and the United States fell by more than half.

But birth rates did not drop simply because there was more food. If more food and better health measures had been the only changes introduced into the lives of the West by the Industrial Revolution, there is every reason to believe that the birth rate would have risen instead of fallen

The big change that took place with industrialization and urbanization was that a large family became, by and large, an economic liability instead of an economic asset A hundred and fifty years ago, when nine-tenths of all working Americans were farmers, it took the work of four families to provide food for five. Under such circumstances, every child was economically valuable. He could hoe corn, herd and milk cows, weed beets Today, however, less than 20 per cent of the American population is required to grow all the food that the rest of us need for a comfortable living—plus a vast surplus for shipment abroad Even on the farms, there is little value in a large family when one tractor can do the work of a dozen men And in all the other fields opened up by industrialization—in trades, services, factories—the child represents a net economic loss Even if his parents wanted a six-year-old to start work, the law would say no. He must be fed, clothed, housed, and educated for at least sixteen and often twenty years The result is shrinking families The number of children in an American family will tend to rise when it is economically convenient to have more children—and not before.[3]

In an industrializing society there is a lag between the time when births begin to lessen and the time when the population

[3] It is easy to misinterpret the meaning of changing birth rates During World War II, for instance, GI's married young, became fathers quickly Yet it would be fallacious to conclude that they were starting a trend toward larger American families So far it appears rather that they simply had their children earlier than they might have done if there had been no war

stops increasing. The principal reason is that the same conditions which make for fewer births make also for longer life. The woman who marries at twenty-five may have fewer children than her sister who married at twelve, but probably she will live longer A woman who bears three children is likely to outlive one who bears a dozen, and a child born into a comfortable home is more likely to survive parturition and infancy than one born to squalor and empty breasts

The result may be a startling nova of population growth. While Europe was cutting her birth rate in two, her numbers rose by 60 per cent

But as the births continue to decrease, the growth in population slows When fewer than 20 babies are born a year for every 1,000 people, the growth stops altogether Both western Europe and the United States have now tobogganed into the upper reaches of this zone. Barring some sensational increase of the present life span, Europe and the United States will stop growing in numbers before the end of this century

Simply supplying more food to more people, then, would be a never-ending process, a treadmill on which man would run until he dropped from exhaustion Families will be as large as fathers and mothers can make them until machines are available to do work more cheaply than it can be done by muscles. This truth is seen by Dr Burch when he speaks of how fast the population of the *industrially backward* [italics mine] areas can develop' Without industrialization, nobody has time to become educated Without industrialization, health and sanitation measures simply mean more people living more miserably

With a properly balanced industrialization, on the other hand, there are no hopeless areas

India will serve as a case in point

India is subject to recurrent famines, in which millions may perish while a rose ripens from bud to blossom. Her numbers swell each decade by a figure that may surpass the whole population of a Spain, a Poland, or an England Religion, climate, child marriage all play a part in this growth Living standards are low,

interests few. Every man is encouraged—in the words of Dr. S Chandrasekhar of the University of Pennsylvania—"to look to his wife and sex intimacy as the only relaxation and recreation *in an otherwise dull and unexciting struggle to make both ends* meet."

It is true that from 1870 to 1930 Europe grew twice as fast, and the United States four times as fast, as India. That, however, was only because a smaller percentage of Europeans and Americans died.

But even in India, according to Kirtley Mather, the birth rate has been steadily dropping since the turn of the century—dropping as the first wavelets of industrialization have begun to lap the Indians' feet. Between 1920 and 1940 the production of pig iron in India went up more than six times, that of finished steel nearly *five times. Promotion of capital and consumer goods in*dustries is a primary plank in the platform of the Nehru government. With the inevitability of an ocean tide, industrialization is coming to the submerged millions of India Whether it will *be so balanced as to bring about a steady rise in living standards* remains to be seen; but it is certain that with it will come modernization and eventually a further slackening of births.

Religious beliefs may slow the decline in Indian births, but they are no more likely to stop it there than they were in Catholic Italy, where between 1870 and 1940 the rate decreased by nearly 40 per cent, or in the United States, where on the same economic and social levels there is no significant difference in the number of children born to Catholics and Protestants

Demographers have estimated that the decline in Indian births will match the decline in deaths by the middle of the next century, and that the population will then stabilize at around 700,000,000 souls.

But such a stabilization, given continued enlargement of food sources, must assume the speeding of industrialization in India. And as with India, so with Japan, whose birth rate, according to Mather, has been turning tentatively downward for twenty-five years.

Dr. Radhakamal Mukerjee, one of India's leading students of

faster on the treadmill, unless they are followed by a self-sustaining process of healthy industrialization. Industrialization is the far-off goal, Point 4 is the essential first step.

4

From Empire to Point 4

BENJAMIN FRANKLIN once sent a young friend ten louis d'or and the following note "I do not pretend to give such a sum; I only lend it to you When you shall return to your country, you cannot fail of getting into some business that will in time enable you to pay all your debts In that case, when you meet with another honest man in similar distress, you must pay me by lending this sum to him, enjoining him to discharge the debt by a like operation when he shall be able and shall meet with such another opportunity. I hope it may thus go through many hands before it meets with a knave that will stop its progress"

As America prepares to undertake her Bold New Program, we might well ponder Franklin's adjuration. Too frequently we assume that we are a self-made power, owing no debt of gratitude to any other nation The facts are to the contrary. Almost before the Liberty Bell had stopped pealing, foreign investors were force-feeding the American economy. Even the purchase of the Louisiana Territory was financed in Holland.

The deep depression which overtook the Old World toward the middle of the nineteenth century impelled an immense development of overseas areas, and particularly of the United States. Part of the contribution took the form of immigration, with all its attendant skills Part took the form of capital. The result for Europe was a new swing upward in production and consumption. The result for the United States was to put her development half a hundred years ahead of schedule. When there was little more to be done for us, toward 1875, Europe underwent a new crisis, from which she recovered only by transferring her initiative to such new outlets as Australia, South Africa, and Argentina.

fled to London from abroad during the turmoil of twelve European revolutions.

To avoid a disastrous slump, the British money market set about reconstructing Europe; it haphazardly developed the markets of the New World; and when the stimulus of those efforts began to wear off, it opened up the sub-continent of India.

The British isolationists objected as vigorously in 1815 as the Henry Hazlitts in 1950. Was it to be endured, demanded Lord Lauderdale, that the law would interfere to prevent a poor worker from leaving the country, but would permit—nay, encourage—export of "the money of the country, the main nerve of all our resources?" A morning paper reminded the British that "the prosperity of our own, and not foreign people or slaves, constitutes the wealth and prosperity of the British Isles."

But that was whistling into the wind. When continental countries levied high tariffs on British goods, British industrialists countered by exporting the machines to make the goods. When Parliament forbade such exports, saying knowledge of technical improvements should be kept at home, the businessmen simply smuggled out the designs and built their machines abroad. Englishmen established machine shops and textile factories throughout France. In Belgium the Britisher William Cockerill and his son John, though lacking British pounds, used British skill and initiative to create mills, factories, mines, and forges for clothing, cotton, machines, paper, zinc. Everywhere the British stirred local capital to activity. Within twenty years after the Treaty of 1815 they had spread the Industrial Revolution across Western Europe.

In Latin America during the early 1820's British enterprises sprang up from Mexico almost to Cape Horn. In Colombia, for instance, one Englishman had exclusive rights for rolling copper, another for salt, a third for the exploitation of all Bolivar's private estates. Two had pearl-fishing concessions. Newspapers were established at Bogotá and Caracas to push British interests. The British even drew up plans for a Nicaraguan canal.

fled to London from abroad during the turmoil of twelve European revolutions.

To avoid a disastrous slump, the British money market set about reconstructing Europe; it haphazardly developed the markets of the New World; and when the stimulus of those efforts began to wear off, it opened up the sub-continent of India.

The British isolationists objected as vigorously in 1815 as the Henry Hazlitts in 1950 Was it to be endured, demanded Lord Lauderdale, that the law would interfere to prevent a poor worker from leaving the country, but would permit—nay, encourage—export of "the money of the country, the main nerve of all our resources?" A morning paper reminded the British that "the prosperity of our own, and not foreign people or slaves, constitutes the wealth and prosperity of the British Isles."

But that was whistling into the wind When continental countries levied high tariffs on British goods, British industrialists countered by exporting the machines to make the goods. When Parliament forbade such exports, saying knowledge of technical improvements should be kept at home, the businessmen simply smuggled out the designs and built their machines abroad. Englishmen established machine shops and textile factories throughout France. In Belgium the Britisher William Cockerill and his son John, though lacking British pounds, used British skill and initiative to create mills, factories, mines, and forges for clothing, cotton, machines, paper, zinc Everywhere the British stirred local capital to activity Within twenty years after the Treaty of 1815 they had spread the Industrial Revolution across Western Europe.

In Latin America during the early 1820's British enterprises sprang up from Mexico almost to Cape Horn. In Colombia, for instance, one Englishman had exclusive rights for rolling copper, another for salt, a third for the exploitation of all Bolivar's private estates. Two had pearl-fishing concessions Newspapers were established at Bogotá and Caracas to push British interests. The British even drew up plans for a Nicaraguan canal.

ish investors turned their eyes toward the United States. We were then a country of little free capital; the produce of a man's farm, to the extent that it exceeded the needs of his own family, usually went toward clearing more land and raising more crops. There was no loose money available for building highways, canals, harbors, and railroads. But to fulfill what we considered to be our destiny such works were essential; and in London, American promoters found a seemingly bottomless pot of gold. Between 1815 and 1830 the British had invested scarcely £5,000,000 in the United States. Within the next ten years the figure approached £40,000,000

Part of the stimulus was provided by the phenomenal success of the Erie Canal, which was completed in 1825. Dug for 363 miles between Buffalo and Albany at a cost of only $7,143,789, the Canal was financed by issuing New York State bonds, almost all of which were soon owned by Englishmen Against all historic precedent, the big ditch actually paid its way. In the first year of operations it made enough to meet the interest on its debts. Within ten years it had paid off the principal—and western New York and northern Ohio had been opened up to permanent settlement.

It is difficult to say whether this phenomenon was more bemusing to the Americans or to the British. Every American state promptly decided that it could do as well as New York. By 1836 over $90,000,000 had been spent in the North on railways and canals alone. Most of it was British money, invested in state securities. Two years later total British capital invested in the United States reached twice that figure. In the spring of 1836 Samuel Jaudon of the United States Bank carried on a single trip to England $20,000,000 in securities, together with bonds for a gold loan of £2,000,000. Needless to say, few of the enterprises thus financed were as productive as the Erie Canal.

English pounds stimulated industrial development in the United States perhaps no less than public works, though by more indirect means. The merchant bankers of London preferred to export British goods, not to encourage competition. But once a credit was granted, there was no practical ways of limiting the

ish investors turned their eyes toward the United States We were then a country of little free capital; the produce of a man's farm, to the extent that it exceeded the needs of his own family, usually went toward clearing more land and raising more crops. There was no loose money available for building highways, canals, harbors, and railroads. But to fulfill what we considered to be our destiny such works were essential; and in London, American promoters found a seemingly bottomless pot of gold. Between 1815 and 1830 the British had invested scarcely £5,-000,000 in the United States. Within the next ten years the figure approached £40,000,000.

Part of the stimulus was provided by the phenomenal success of the Erie Canal, which was completed in 1825. Dug for 363 miles between Buffalo and Albany at a cost of only $7,143,-789, the Canal was financed by issuing New York State bonds, almost all of which were soon owned by Englishmen. Against all historic precedent, the big ditch actually paid its way. In the first year of operations it made enough to meet the interest on its debts. Within ten years it had paid off the principal—and western New York and northern Ohio had been opened up to permanent settlement.

It is difficult to say whether this phenomenon was more bemusing to the Americans or to the British. Every American state promptly decided that it could do as well as New York. By 1836 over $90,000,000 had been spent in the North on railways and canals alone. Most of it was British money, invested in state securities Two years later total British capital invested in the United States reached twice that figure. In the spring of 1836 Samuel Jaudon of the United States Bank carried on a single trip to England $20,000,000 in securities, together with bonds for a gold loan of £2,000,000. Needless to say, few of the enterprises thus financed were as productive as the Erie Canal.

English pounds stimulated industrial development in the United States perhaps no less than public works, though by more indirect means. The merchant bankers of London preferred to export British goods, not to encourage competition But once a credit was granted, there was no practical ways of limiting the

vested here. Since the American East Coast was developing its own capital market, the thoughts of British speculators turned more and more to the comparatively untouched West. English settlements sprang up in Kansas and Colorado. London was instrumental in the financing of the spectacular mining developments that followed the Pike's Peak gold rush. And the years from 1870 to 1900 provided one of the most colorful phases of British investment in this country—the stimulation of our cattle empire.

As early as the 1840's, the Hudson's Bay Company had been busy raising mixed Shorthorn and Durham cattle along the Columbia River. Thousands were loaned or sold to Oregon settlers For twenty years after 1840, cattle, horses, sheep, and hogs moved from Britain to America in steadily increasing numbers. By the time disease decimated British herds in the 1860's, American cattle were available in quantities sufficient to satisfy even John Bull's appetite for beef

The herds on the American plains assumed a morbid fascination for the British The average Briton knew more about the legendary country of cattle and cowboys than did the average New Yorker. One British wag commented "Every time a cow moves her tail to switch a fly she exerts a force of three pounds In the course of the summer a single cow wastes 5,000,000 pounds of energy. The cows of America throw away enough power to move every piece of machinery in the world This is exclusive of kicking milkmaids off stools "

In 1876 the American West sent Britain $2,000,000 worth of refrigerated meat. Live cattle, too, had begun returning to England in enormous quantities. In 1879 an entire fleet of ships was acquired to transport 75,391 head. In the same year the fresh meat trade grossed $6,000,000 This was the era of the influx of young Britishers to the West, where they promptly became the heroes of jocose tales and ballads. Typical was the following report from the *Pall Mall Gazette* of March 15, 1881:

. . . The Earl of Aylesford lives on his ranche of 37,000 acres in Texas [with] 20 or 30 horses, 13 dogs, and five servants. He has not

tury require a fuller analysis than is possible here. Some points, however, can be conveniently summarized:

1. Investment of capital and skills in areas which were ready to receive them—viz., western Europe—was successful both from the point of view of the investor and of the investee.

2. Investment in countries which were neither economically, politically, nor psychologically prepared to handle such investments—viz., Latin America of the 1820's—lost the money of the investor and did actual harm to the host countries.

3. Investment in countries which could put the money to good use, but which were not yet financially stable or experienced—viz., the United States of the 1830's—greatly accelerated their economic development, but frequently cost the investors their money.

The twentieth century is not doomed to repeat all the mistakes of the nineteenth But since many of the most essential developments under the Bold New Program lie precisely in those areas where effort is most likely to go to waste and returns are least certain to be forthcoming, we must proceed with prayerful care. We shall do well to remember that we are in a position to proceed at all only because the people of other countries once invested capital, skill, and confidence in a strange, uncouth nation on the other side of the world which called itself the United States of America. Now that it is our turn to pass on what we have received, let us profit by their experience.

In the nineteenth century Great Britain was a mature creditor nation. The United States emerged on the world scene in that century not as a creditor but as a debtor. With minor exceptions she was sending abroad not money but goods.

Under the circumstances it was only natural that the early manifestations of imperialism in the United States were comparatively crude.

In the first days of America's emergence as a great power, it appeared that the only lesson we had learned from Old World imperialism was to play the game ourselves harder and for higher stakes. The speed and thoroughness with which we estab-

Europe, our greatest competitor for world markets. Finally, and perhaps most significantly of all, we have promulgated the Bold New Program, bypassing both imperialism and colonialism in the development of backward areas.

What is the meaning of this deviation from forecast? Have we simply developed a more highly involved, more disarming, and so more horrendous form of imperialism? Or has imperialism proved inappropriate to the provincial American temperament? Or have we reached a position of power so outstanding that the old rules no longer apply, and that our self-interest and the world interest have actually and demonstrably intermingled?

It is certain that even in the heyday of Manifest Destiny we felt uncomfortable about the whole thing We tried wherever possible to give our little annexations the appearance of popular uprisings, when we took over alien populations we explained with a straight face that we were simply grooming them for independence, when we sent Marines into unsettled areas we were loud in regretting the necessity. But this piety in aggression had been a convention since history began. Nobody, probably not even we, had any notion that we meant it.

Indeed, our history indicated the contrary. By sheer drive we had expanded across a continent in less than a hundred years. We had not hesitated to sweep aside Indians, Old World empires, or the New World neighbor on our southern border. We had formulated the Monroe Doctrine not simply to prevent further European expansion into the Americas but to lay the groundwork for our own expansion southward

In the last quarter of the nineteenth century we began establishing an empire in the absent-minded manner of a lounger in a country store sampling crackers from an open barrel This was the era of what John Franklin Carter calls "unconsidered trifles." We bought Alaska from the Russians to do them a favor, and criticism of the move from the American public did not die down for twenty years. In 1878 we quietly signed a treaty with the little kingdom of Samoa, south of the equator in the Pacific, giving us the right to establish a naval station in the harbor of Pago Pago; but when the American consul proclaimed a formal

American protectorate over the islands we hastily repudiated him.

In this same absent-minded manner we slipped a hand into the cracker barrel and were astonished when it emerged holding the territory of Hawaii. By 1887 Hawaii was furnishing us with $200,000,000 worth of sugar a year, and most of the sugar planters were Americans. When sugar went onto the free list under the McKinley Tariff Act of 1890, ending the preferred position of Hawaii in the sugar trade, the planters decided to save the situation by making the Islands an American protectorate. Washington was glad to help out. U. S.-minded Hawaiians organized a Committee of Public Safety in January, 1893. We obligingly landed our Marines, and under their protective guns the Committee proclaimed the Hawaiian monarchy to be at an end. This was a surprise to the Queen, who still sat undisturbed in her palace, peaceably governing her islands; but the Committee announced that a provisional government had been set up "until terms of union with the United States have been negotiated and agreed upon." Within an hour the new government had been recognized by the United States minister. Scarcely a month later a treaty of annexation was reported to the Senate.

Here again, however, there entered into play the curious American reluctance to accept the consequences of Manifest Destiny. The American people did not want to become emperors. The treaty became a bone of contention between expansionists and non-expansionists. For five years it failed of passage, and Hawaii was finally annexed by joint resolution only when patriotism had been blown to fever heat by the war with Spain.

With the Spanish-American War of 1898 our expansionism went into high gear. We were caught up by the elation of discovering ourselves suddenly a world power.

By January 1, 1899, the government of Cuba was in the hands of the Americans. They proceeded to give her freedom—with strings attached. The new-born republic was forced to make part of its constitution an agreement never to enter into any treaty which might impair the independence of the island and never

Europe, our greatest competitor for world markets. Finally, and perhaps most significantly of all, we have promulgated the Bold New Program, bypassing both imperialism and colonialism in the development of backward areas.

What is the meaning of this deviation from forecast? Have we simply developed a more highly involved, more disarming, and so more horrendous form of imperialism? Or has imperialism proved inappropriate to the provincial American temperament? Or have we reached a position of power so outstanding that the old rules no longer apply, and that our self-interest and the world interest have actually and demonstrably intermingled?

It is certain that even in the heyday of Manifest Destiny we felt uncomfortable about the whole thing. We tried wherever possible to give our little annexations the appearance of popular uprisings; when we took over alien populations we explained with a straight face that we were simply grooming them for independence; when we sent Marines into unsettled areas we were loud in regretting the necessity. But this piety in aggression had been a convention since history began. Nobody, probably not even we, had any notion that we meant it.

Indeed, our history indicated the contrary. By sheer drive we had expanded across a continent in less than a hundred years We had not hesitated to sweep aside Indians, Old World empires, or the New World neighbor on our southern border. We had formulated the Monroe Doctrine not simply to prevent further European expansion into the Americas but to lay the groundwork for our own expansion southward

In the last quarter of the nineteenth century we began establishing an empire in the absent-minded manner of a lounger in a country store sampling crackers from an open barrel. This was the era of what John Franklin Carter calls "unconsidered trifles" We bought Alaska from the Russians to do them a favor, and criticism of the move from the American public did not die down for twenty years. In 1878 we quietly signed a treaty with the little kingdom of Samoa, south of the equator in the Pacific, giving us the right to establish a naval station in the harbor of Pago Pago; but when the American consul proclaimed a formal

to contract any public debt in excess of its ordinary revenues The United States was given the right to intervene to protect Cuban independence, and was granted coaling and naval stations Under these provisions, which in the United States were known as the Platt Amendment, we intervened four times in the internal affairs of Cuba As one historian remarked, Cuba was "no more independent than Long Island"

To the extent that immediate American self interest was at stake in the Caribbean, it is understandable it not justifiable that we should have given Cuba only half her freedom It was equally understandable that we should have taken over Puerto Rico

In addition, however, the Treaty of Paris (December 10, 1898) provided for the cession of the far-distant Philippines to the United States in return for a payment to Spain of $20,-000,000 Here influences of a balder sort were at work Whitelaw Reid, one of the Paris Peace commissioners, justified the acquisition as follows

> The Pacific Ocean is in our hands now Practically we own more than half the coast on this side, dominate the rest and have midway stations in the Sandwich and Aleutian Islands To extend now the authority of the United States over the great Philippine Archipelago is to fence in the China Sea and secure an almost equally commanding position on the other side of the Pacific—doubling our control of it and of the fabulous trade the Twentieth Century will see it bear The trade in the Philippines will be but a drop in the bucket compared to that of China, for which they give us an unapproachable foothold

This was raw imperialism and it was a heady wine It was also deeply disquieting to millions of Americans

But it was in Latin America, and particularly in the Caribbean area, that we were able to throw our weight around at will Here are some outstanding instances

1. Panama. In 1903 Congress authorized President Roosevelt to negotiate with Colombia for a canal across the Isthmus of Panama. The Colombian Senate, however, failed to accept the proposed treaty. By strange coincidence, Panama at once

launched its fiftieth revolution in fifty years, and the United States Navy prevented the Colombian government from suppressing it. Ten days later the new State of Panama ceded the Canal Zone to the United States.

2. Santo Domingo In 1903, through "gross mismanagement" of her finances, Santo Domingo found herself with a revenue of $500,000 from which to pay the interest of $1,700,000 which was due on her external debt The United States Government assumed the fiscal administration of the Republic soon afterward Political intervention followed, and after a series of insurrections United States Marines were landed in Santo Domingo on May 4, 1916 For the next eight years Santo Domingo was ruled by a United States military dictatorship

3 Haiti When a revolution in 1915 threatened to bring on French intervention, the United States landed Marines, and forced on the Haitians a treaty giving Haiti an American military high commissioner, a general receiver of customs, a financial adviser, and an American-directed constabulary.

4 Nicaragua In 1909 Nicaragua opposed United States overtures for a naval base in the Gulf of Fonseca and a second canal route across the Isthmus Again by strange coincidence a revolution broke out "It was financed," assert Nearing and Freeman in *Dollar Diplomacy*,[4] "by Adolfo Diaz, a local official at Bluefields of La Luz y Los Angeles Mining Company, an American corporation Diaz was receiving a salary of $1,000 a year Though he was not known to have had other resources, he was able to advance the revolution $600,000, which he eventually repaid himself American Marines again prevented government forces from suppressing the rebellion Soon afterward the new regime gave the United States its desired Fonseca naval base, the right to build a canal, and control for ninety-nine years over the approach to it

The United States intervened in Nicaragua six times to prevent "political anarchy" near the Panama Canal. For similar

[4] *Dollar Diplomacy, A Study in American Imperialism* (London Allen & Unwin, 1926)

reasons we intervened six times in the Honduras, once in Costa Rica, once in Colombia, twice in Venezuela.

But our stake in Latin America, however dramatic its manifestations, was only part of our growing interest in the outside world. In 1914 the United States still owed other countries $3,686,000,000 on balance. By 1919 we were creditors to the extent of $12,652,000,000. By 1929 that figure had risen to $19,763,000,000. We were, by and large, optimistic investors. During the 1920's, as the British had done a hundred years before, we plunked down our money first and asked what the game was afterward.

Throughout this period, an increasingly important function of the State Department was to assist American investors, many of whom had a prodigious capacity to burn their fingers Presumably this basic preoccupation of the government not only has not changed, but could not change. Yet suddenly, at the very peak of our power and drive, classic dollar diplomacy took sick By 1933 it was dead What was it that had happened?

As a creditor nation, it was to our interest to see to it that the countries where we had put our money remained stable, prosperous, and friendly so that they could and would pay the money back. To assure profits by fair treatment was cheaper than to assure them by the use of Marines It was also more efficient

Enlightened self-interest coincided with the pricking of conscience. For almost the first time in history, an expanding nation was able to stand back, see itself with some degree of objectivity, and decide that it was busy doing itself harm instead of good. The policy of the big stick was outdated It no longer worked. Nationalism was on the rise. The thinking of men had moved on; our consciences could no longer tolerate Manifest Destiny.

"The position in which the United States found itself in Latin America," reports one student of the period, "was similar to the position of Great Britain in Persia, in China, in Ireland, South Africa, and India. Our first, fumbling efforts toward a new Latin American policy were little more than an openly ex-

pressed desire to be conciliatory instead of tough, to be a friend instead of a disciplinarian, to co-operate instead of exploiting "[5]

President Coolidge made one of the first gestures toward co-operation in 1927 when he sent Henry L. Stimson to Nicaragua to persuade the rival political factions there to hold an election under United States supervision The experiment was partially successful, and both parties asked the United States to supervise *the election four years later* But "That sturdy patriot, General Sandino, refused to accept the compromise with nationalism, and he made the Marines look silly before they gave up chasing him and withdrew in 1933 "[6]

In Mexico, too, Mr. Coolidge tried a new tack. A dispute was at full fire over Mexico s seizure of American oil holdings, and United States newspapers were hinting at armed intervention. Mr Coolidge appointed Dwight Morrow Ambassador to Mexico When President Calles asked Morrow if he could suggest any solution of the controversy, the Ambassador referred him to a ruling of the Mexican Supreme Court under the Carranza Administration upholding an oil company's claim to rights acquired before 1917 By acknowledging this precedent, the Mexican government was able to maintain its principle that subsoil was the property of the nation, while the United States maintained its principle that rights acquired before 1917 could not be legislated away When the issue arose again in 1938, the State Department 'refused with firmness to sacrifice the friendship of Mexico by any threat of intervention . . . The United States had made good its determination never again to intervene below the Rio Grande "[7]

Morrow s achievement was historic, remarks his biographer, Harold Nicolson, because "he was . the first responsible American to proclaim with complete clarity that forcible intervention, however noble its purpose, was in fact a power doctrine and as such in conflict with the conscience of the United States he was the first unwaveringly to support Elihu

[5] Charles Wertenbaker A New Doctrine for the Americas (New York The Viking Press 1941)
[6] Ibid
[7] Ibid

reasons we intervened six times in the Honduras, once in Costa Rica, once in Colombia, twice in Venezuela.

But our stake in Latin America, however dramatic its manifestations, was only part of our growing interest in the outside world. In 1914 the United States still owed other countries $3,686,000,000 on balance. By 1919 we were creditors to the extent of $12,652,000,000 By 1929 that figure had risen to $19,763,000,000 We were, by and large, optimistic investors. During the 1920's, as the British had done a hundred years before, we plunked down our money first and asked what the game was afterward.

Throughout this period, an increasingly important function of the State Department was to assist American investors, many of whom had a prodigious capacity to burn their fingers. Presumably this basic preoccupation of the government not only has not changed, but could not change Yet suddenly, at the very peak of our power and drive, classic dollar diplomacy took sick By 1933 it was dead. What was it that had happened?

As a creditor nation, it was to our interest to see to it that the countries where we had put our money remained stable, prosperous, and friendly so that they could and would pay the money back. To assure profits by fair treatment was cheaper than to assure them by the use of Marines It was also more efficient

Enlightened self-interest coincided with the pricking of conscience. For almost the first time in history, an expanding nation was able to stand back, see itself with some degree of objectivity, and decide that it was busy doing itself harm instead of good. The policy of the big stick was outdated It no longer worked. Nationalism was on the rise. The thinking of men had moved on; our consciences could no longer tolerate Manifest Destiny.

"The position in which the United States found itself in Latin America," reports one student of the period, "was similar to the position of Great Britain in Persia, in China, in Ireland, South Africa, and India. Our first, fumbling efforts toward a new Latin American policy were little more than an openly ex-

pressed desire to be conciliatory instead of tough, to be a friend instead of a disciplinarian, to co-operate instead of exploiting."[5]

President Coolidge made one of the first gestures toward co-operation in 1927 when he sent Henry L. Stimson to Nicaragua to persuade the rival political factions there to hold an election under United States supervision The experiment was partially successful, and both parties asked the United States to supervise the election four years later But "That sturdy patriot, General Sandino, refused to accept the compromise with nationalism, and he made the Marines look silly before they gave up chasing him and withdrew in 1933"[6]

In Mexico, too, Mr Coolidge tried a new tack. A dispute was at full fire over Mexico's seizure of American oil holdings, and United States newspapers were hinting at armed intervention. Mr Coolidge appointed Dwight Morrow Ambassador to Mexico When President Calles asked Morrow if he could suggest any solution of the controversy, the Ambassador referred him to a ruling of the Mexican Supreme Court under the Carranza Administration upholding an oil company's claim to rights acquired before 1917 By acknowledging this precedent, the Mexican government was able to maintain its principle that subsoil was the property of the nation, while the United States maintained *its principle* that rights acquired before 1917 could not be legislated away When the issue arose again in 1938, the State Department "refused with firmness to sacrifice the friendship of Mexico by any threat of intervention . . The United States had made good its determination never again to intervene below the Rio Grande"[7]

Morrow's achievement was historic, remarks his biographer, Harold Nicolson, because "he was . . the first responsible American to proclaim with complete clarity that forcible intervention, however noble its purpose, was in fact a power doctrine and as such in conflict with the conscience of the United States, he was the first unwaveringly to support Elihu

5 Charles Wertenbaker A New Doctrine for the Americas (New York The Viking Press 1941)
6 Ibid
7 Ibid

Root's contention that private debts in foreign countries ought not to be collected by *governmental coercion; he was the first to* argue that co-operation between the United States and Latin America, however uncertain and disappointing it might momentarily appear, would in the end prove the only practicable policy. . . ."

Meanwhile, in the 1920's a young diplomat named Sumner Welles had entered a vigorous intellectual dissent to the policy of dollar diplomacy He wrote:

> The benefits resulting from the military occupation of the Dominican Republic, so far as the national interests of the United States are concerned, have been of infinitesimal importance when compared to the suspicions, fears, and hatred to which the occupation gave rise throughout the American continent. . . So it has been with every military occupation or intervention . .
>
> It is in the stimulation of commercial ties, in the facilitation of educational advantages . . in the initiation of financing to productive purposes, in the proffer of technical and expert assistance when it may be needed, that the United States will obtain the results desired, and not through military occupation, military intervention, or armed supervision of elections.

The program advanced by Mr. Welles meant raising imperialism to a level where imperialism ceased to be a meaningful word. He had an opportunity to turn his program into action in 1933, when the incoming President, Franklin D. Roosevelt, named him Assistant Secretary

good neighbor. . . . In this spirit the people of every republic on our continent are coming to a deep understanding of the fact that the Monroe Doctrine . . . was and is directed at the maintenance of independence by the peoples of the continent."

It was at the seventh Pan-American Conference at Montevideo in 1933 that the United States finally took the step which was to change Latin America from a continent of sullen enemies to one of friends At that convention the United States reversed its policy of more than a hundred years when Cordell Hull supported a declaration that "no state has the right to intervene in the internal or external affairs of another" Roosevelt backed him soon afterward by asserting that "The definite policy of the United States from now on is one opposed to armed intervention ' Five months later the Platt Amendment was abrogated, and the following August the Marines were withdrawn from Haiti The Good Neighbor policy was in full swing.

In terms of immediate self-interest, the result was a band of reliable allies to the south of us in the Second World War. In terms of history, it meant an awareness that imperialism and dollar diplomacy by the United States were dead, and that henceforth our own welfare would be best served by acting as good citizens of the world The Good Neighbor policy of Franklin D Roosevelt, Cordell Hull, and Sumner Welles contained the seeds that are springing today in Point 4—the Bold New Program.

5

The Good Neighbor Policy: Bellwether of Point 4

A SOWER, said Jesus, went forth to sow, "and when he sowed, some seeds fell by the wayside, and the fowls came and devoured them up, some fell upon stony places, where they had not much earth, and forthwith they sprung up, because they had no deepness of earth; and when the sun was up, they were scorched, and because they had no root, they withered away.

Root's contention that private debts in foreign countries ought not to be collected by governmental coercion; he was the first to argue that co-operation between the United States and Latin America, however uncertain and disappointing it might momentarily appear, would in the end prove the only practicable policy. . . ."

Meanwhile, in the 1920's a young diplomat named Sumner Welles had entered a vigorous intellectual dissent to the policy of dollar diplomacy He wrote·

> The benefits resulting from the military occupation of the Dominican Republic, so far as the national interests of the United States are concerned, have been of infinitesimal importance when compared to the suspicions, fears, and hatred to which the occupation gave rise throughout the American continent . . . So it has been with every military occupation or intervention
>
> It is in the stimulation of commercial ties, in the facilitation of educational advantages . in the initiation of financing to productive purposes, in the proffer of technical and expert assistance when it may be needed, that the United States will obtain the results desired, and not through military occupation, military intervention, or armed supervision of elections.

The program advanced by Mr. Welles meant raising imperialism to a level where imperialism ceased to be a meaningful word. He had an opportunity to turn his program into action in 1933, when the incoming President, Franklin D. Roosevelt, named him Assistant Secretary of State.

In his inaugural speech the new President made a passing statement on which history was soon to hang its hat. "In the field of world policy," he said, "I would dedicate this nation to the policy of the good neighbor—the neighbor who resolutely respects himself, and, because he does so, respects the rights of others—the neighbor who respects his obligations and respects the sanctity of his agreements in and with a world of neighbors."

A few weeks later he tied the Good Neighbor policy directly to Latin America, declaring, "The essential qualities of a true Pan-Americanism must be the same as those which constitute a

good neighbor. . . . In this spirit the people of every republic on our continent are coming to a deep understanding of the fact that the Monroe Doctrine . . . was and is directed at the maintenance of independence by the peoples of the continent."

It was at the seventh Pan-American Conference at Montevideo in 1933 that the United States finally took the step which was to change Latin America from a continent of sullen enemies to one of friends At that convention the United States reversed its policy of more than a hundred years when Cordell Hull supported a declaration that "no state has the right to intervene in the internal or external affairs of another." Roosevelt backed him soon afterward by asserting that "The definite policy of the United States from now on is one opposed to armed intervention ' Five months later the Platt Amendment was abrogated, and the following August the Marines were withdrawn from Haiti The Good Neighbor policy was in full swing.

In terms of immediate self-interest, the result was a band of reliable allies to the south of us in the Second World War. In terms of history, it meant an awareness that imperialism and dollar diplomacy by the United States were dead, and that henceforth our own welfare would be best served by acting as good citizens of the world. The Good Neighbor policy of Franklin D Roosevelt, Cordell Hull, and Sumner Welles contained the seeds that are springing today in Point 4—the Bold New Program.

5

The Good Neighbor Policy: Bellwether of Point 4

A SOWER, said Jesus, went forth to sow, "and when he sowed, some seeds fell by the wayside, and the fowls came and devoured them up, some fell upon stony places, where they had not much earth, and forthwith they sprung up, because they had no deepness of earth; and when the sun was up, they were scorched, and because they had no root, they withered away.

And some fell among thorns; and the thorns sprung up, and choked them; but others fell into good ground, and brought forth fruit, some an hundredfold, some sixtyfold, some thirtyfold."

In the Good Neighbor policy the United States has sown much as did the farmer in Jesus' parable. We too have cast our seed alike in barren ground, thorny ground, and good soil. The successes and failures of our sowing, whether it took place as government loans, private investments, or technical aid, are graven deeply in the minds of the men who are putting together the Bold New Program. For the rest of the world as well, the failures and successes of the Good Neighbor policy in the economic field provide a convenient measurement for the likely usefulness of the newer, vaster concept. If, for instance, the Good Neighbor policy is to be turned off and on at our convenience, like a faucet, it will be difficult for underdeveloped areas to place much faith in the long-range reliability of Point 4. It is instructive, therefore, to see how our policy in Latin America has prospered during the past fifteen years.

The Good Neighbor policy started as a political rather than an economic program. It dealt first with people's feelings. But since people's feelings are intimately connected with their pocketbooks, it was not altogether coincidence that United States investments in Latin America increased until by 1940 they touched the staggering total of $4,000,000,000, of which nearly half represented private investments in business enterprises, securities, and real property Even before World War II, the Argentine government had received $60,000,000 from the Export-Import Bank for stimulation of industrial and agricultural production. Brazil had received $20,000,000 for construction of the great Redondo steel mills, which were expected to spread industrialization across South America

Sumner Welles has explained that these loans were "premised on the conviction that social progress and political stability in the hemisphere were contingent upon higher living standards, and that the growth of true democracy was also contingent upon better nutrition, sanitation, education, and communications. It

was believed that the measures of financial and economic co-operation that were undertaken would not only increase the probability of political and military security but also provide a greater demand and increased purchasing power for United States exports."

While the government was pouring loans into Latin America before and during the war, private investors were infecting her with a rash of industrialization United States capital, frequently in combination with local interests, ran up manufacturing plants—particularly for consumer goods such as textiles, processed food, and leather products With prices uncontrolled, the profits were enormous Costs were irrelevant; the output could not keep up with the demand in any event Argentina alone increased the number of workers employed in industry from 462,000 in 1935 to 829,000 in 1941, while raising the value of her manufactured products from 3,500,000,000 pesos (about $5,700,000,000) to 6,300,000,000

Besides government loans and private investments, a third kind of co-operation took place during this period between the United States and Latin America It consisted of United States technical aid for agricultural, health, and educational projects This assistance imposed virtually no drain on our private or public capital resources

In 1938 the United States established an Interdepartmental Committee on Scientific and Cultural Co-operation which now includes representatives of 25 federal departments and agencies. The Department of Agriculture, for instance, sent experts to Latin America to help the republics there set up co-operative agricultural stations A major part of the effort was to go into crops which were either complementary to or non-competitive with our own Among these were cocoa, coffee, fibers, insecticides, medicinal plants, tea, and rubber. Congress hoped that the result would be an increase in Latin America's agricultural efficiency and a rise in her levels of living

Three years later, at the Rio de Janeiro Conference of Foreign

And some fell among thorns; and the thorns sprung up, and choked them; but others fell into good ground, and brought forth fruit, some an hundredfold, some sixtyfold, some thirtyfold."

In the Good Neighbor policy the United States has sown much as did the farmer in Jesus' parable. We too have cast our seed alike in barren ground, thorny ground, and good soil. The successes and failures of our sowing, whether it took place as government loans, private investments, or technical aid, are graven deeply in the minds of the men who are putting together the Bold New Program. For the rest of the world as well, the failures and successes of the Good Neighbor policy in the economic field provide a convenient measurement for the likely usefulness of the newer, vaster concept If, for instance, the Good Neighbor policy is to be turned off and on at our convenience, like a faucet, it will be difficult for underdeveloped areas to place much faith in the long-range reliability of Point 4. It is instructive, therefore, to see how our policy in Latin America has prospered during the past fifteen years.

The Good Neighbor policy started as a political rather than an economic program. It dealt first with people's feelings. But since people's feelings are intimately connected with their pocketbooks, it was not altogether coincidence that United States investments in Latin America increased until by 1940 they touched the staggering total of $4,000,000,000, of which nearly half represented private investments in business enterprises, securities, and real property. Even before World War II, the Argentine government had received $60,000,000 from the Export-Import Bank for stimulation of industrial and agricultural production. Brazil had received $20,000,000 for construction of the great Redondo steel mills, which were expected to spread industrialization across South America.

Sumner Welles has explained that these loans were "premised on the conviction that social progress and political stability in the hemisphere were contingent upon higher living standards, and that the growth of true democracy was also contingent upon better nutrition, sanitation, education, and communications It

was believed that the measures of financial and economic co-operation that were undertaken would not only increase the probability of political and military security but also provide a greater demand and increased purchasing power for United States exports."

While the government was pouring loans into Latin America before and during the war, private investors were infecting her with a rash of industrialization. United States capital, frequently in combination with local interests, ran up manufacturing plants—particularly for consumer goods such as textiles, processed food, and leather products. With prices uncontrolled, the profits were enormous Costs were irrelevant; the output could not keep up with the demand in any event. Argentina alone increased the number of workers employed in industry from 462,000 in 1935 to 829,000 in 1941, while raising the value of her manufactured products from 3,500,000,000 pesos (about $5,700,000,000) to 6,300,000,000.

Besides government loans and private investments, a third kind of co-operation took place during this period between the United States and Latin America It consisted of United States technical aid for agricultural, health, and educational projects. This assistance imposed virtually no drain on our private or public capital resources

In 1938 the United States established an Interdepartmental Committee on Scientific and Cultural Co-operation which now includes representatives of 25 federal departments and agencies. The Department of Agriculture, for instance, sent experts to Latin America to help the republics there set up co operative agricultural stations A major part of the effort was to go into crops which were either complementary to or non-competitive with our own Among these were cocoa, coffee, fibers, insecticides, medicinal plants, tea, and rubber. Congress hoped that the result would be an increase in Latin America's agricultural efficiency and a rise in her levels of living.

Three years later, at the Rio de Janeiro Conference of Foreign

Ministers, a resolution was adopted favoring co-operation of the American republics to promote health, sanitation, and education. The foreign ministers considered such a program a sensible way to mobilize western hemisphere resources, since a disease-ridden, illiterate, and undernourished people would be of little help in war. "At this time," says a *New York Times* reporter, "some countries did not produce food enough for their own people. In others illiteracy ran as high as 75 per cent. Eighty per cent of the people had intestinal diseases, 10 per cent had malaria. One out of five babies died, and life expectancy was forty-five years."

Shortly afterward the United States established three government corporations which later merged as the Institute of Inter-American Affairs, a branch of the Office of Inter-American Affairs headed by Nelson Rockefeller. It was designed to provide technical and material assistance for such varied developments as hospital and school construction, sewage and water *supply projects, elementary education, vocational training* programs, and training in modern agricultural methods.

But after the war something went wrong. As the manufacturing centers of Europe and Japan came back to life, as a buyers' market replaced the sellers' market, marginal Latin American industries found themselves unable to bring about rapidly the increases in efficiency which were essential to a healthy development. In many instances they were producing worse merchandise than their foreign competitors, at a higher cost. There followed in fast succession a zooming of tariffs, a drop in local demand, layoffs of workers, attempts to reduce wages, social and economic unrest.

With little foreign exchange to pay for machinery or raw materials (a great part of it had disappeared in purchases of imported luxuries), industrialization slowed or halted. Currencies depreciated. Inflation injured merchants and industrialists, terrified and infuriated labor, suspended a Damoclean sword over Latin American homes.

The result was a swing back to revolution and dictatorship;

1948, says Sumner Welles, brought "political uprisings in Colombia, a revolution in Costa Rica, dangerous unrest in Central America, a series of abortive revolts in Panama, Paraguay, and Bolivia, a continuing state of political and social disturbance in Chile . . . a revolution in Peru. The junta installed in Lima by General Odría has thrown the labor leaders in jail. It has outlawed the Apra, a party which is neither fascist nor Communist, and which, with all its mistakes, has unquestionably tried to better the lot of the underprivileged, and particularly that of the Indian population For the time being democracy in Peru has been stifled "

Between the end of the Second World War and the end of 1949 there were twelve coups and revolts below our border. Relations with the United States were at a postwar low. The Latin Americans appeared to believe we had let them down.

Yet Latin America is obviously better off than she was before the start of the Good Neighbor program. The principle of nonintervention in Latin American affairs remains the guiding star of our policy toward the south—in itself an historic achievement Latin America is selling three times as much outside her borders, in dollar value, as she sold in 1939—an increase which far exceeds any rise in costs Prewar trade with Europe has been virtually restored, due in no small part to the increased buying power created in European countries by the Marshall Plan.

The Institute of Inter-American Studies reported in 1949 that "the United States has expanded its purchases of Latin American goods to provide the greatest volume of dollar-purchasing power ever enjoyed by Latin America.' Ten years ago we imported scarcely $500,000,000 worth of goods from the other American republics. By 1944 the figure exceeded $1,500,000,000 In 1948 it reached $2,300,000,000, not counting purchases and commitments of $153,000,000 for the European Recovery Program and U S -occupied areas. "United States private investment in 1947 alone," said the Institute, "was almost double the total for the period of 1940–45."

Living standards are higher in Latin America today than they

Ministers, a resolution was adopted favoring co-operation of the American republics to promote health, sanitation, and education. The foreign ministers considered such a program a sensible way to mobilize western hemisphere resources, since a disease-ridden, illiterate, and undernourished people would be of little help in war. "At this time," says a *New York Times* reporter, "some countries did not produce food enough for their own people. In others illiteracy ran as high as 75 per cent. Eighty per cent of the people had intestinal diseases, 10 per cent had malaria. One out of five babies died, and life expectancy was forty-five years."

Shortly afterward the United States established three government corporations which later merged as the Institute of Inter-American Affairs, a branch of the Office of Inter-American Affairs headed by Nelson Rockefeller. It was designed to provide technical and material assistance for such varied developments as hospital and school construction, sewage and water supply projects, elementary education, vocational training programs, and training in modern agricultural methods.

But after the war something went wrong. As the manufacturing centers of Europe and Japan came back to life, as a buyers' market replaced the sellers' market, marginal Latin American industries found themselves unable to bring about rapidly the increases in efficiency which were essential to a healthy development. In many instances they were producing worse merchandise than their foreign competitors, at a higher cost. There followed in fast succession a zooming of tariffs, a drop in local demand, layoffs of workers, attempts to reduce wages, social and economic unrest.

With little foreign exchange to pay for machinery or raw materials (a great part of it had disappeared in purchases of imported luxuries), industrialization slowed or halted. Currencies depreciated. Inflation injured merchants and industrialists, terrified and infuriated labor, suspended a Damoclean sword over Latin American homes.

The result was a swing back to revolution and dictatorship;

such combinations might be possible—but only if the investors could be sure there would be effective compensation in the event of expropriation.

The Latin Americans—in the person of Dr. Alberto Lleras Camargo, former president of Colombia and more recently Secretary General of the Organization of American States—then realistically reminded their northern *confreres* that where there was no private capital, the state had to take over some economic functions whether it wanted to or not.

Dr. Lleras contended that "if there were new lands to colonize in the United States, the methods that would be employed for a second trek overland probably would resemble those used by the TVA much more than the hazardous onslaught that once took place on virgin soil by dint of wagon stages." He added that "when a town lacks electric power, that is not an occasion for political philosophy . . . the salient fact is that, in the absence of private capital for the project, everyone demands that the state provide a service too urgently needed to be postponed."

The council finally went on record against discrimination between national and foreign investments by means of foreign exchange controls and punitive taxes; against seizure or expropriation without adequate compensation, against barriers to entry of necessary technical and administrative personnel; and against unnecessary government competition with privately financed enterprises

One American businessman did not wait for the government of the United States to pave the way for him before investing his capital in Latin America.

During World War II, Nelson Rockefeller was head of the Office of Inter American Affairs. Briefly he was Assistant Secretary of State for Latin-America. His job was to strengthen friendship between the United States and the republics to the south. He came to believe that the only solid way to build friendship was to help the Latin Americans *help* themselves. So impressed was Mr. Rockefeller by the opportunities for promoting

such combinations might be possible—but only if the investors could be sure there would be effective compensation in the event of expropriation.

The Latin Americans—in the person of Dr. Alberto Lleras Camargo, former president of Colombia and more recently Secretary General of the Organization of American States—then realistically reminded their northern confreres that where there was no private capital, the state had to take over some economic functions whether it wanted to or not.

Dr. Lleras contended that "if there were new lands to colonize in the United States, the methods that would be employed for a second trek overland probably would resemble those used by the TVA much more than the hazardous onslaught that once took place on virgin soil by dint of wagon stages." He added that "when a town lacks electric power, that is not an occasion for political philosophy . . . the salient fact is that, in the absence of private capital for the project, everyone demands that the state provide a service too urgently needed to be postponed."

The council finally went on record against discrimination between national and foreign investments by means of foreign exchange controls and punitive taxes, against seizure or expropriation without adequate compensation, against barriers to entry of necessary technical and administrative personnel, and against unnecessary government competition with privately financed enterprises.

One American businessman did not wait for the government of the United States to pave the way for him before *investing* his capital in Latin America.

During World War II, Nelson Rockefeller was head of the Office of Inter-American Affairs. Briefly he was Assistant Secretary of State for Latin-America. His job was to strengthen friendship between the United States and the republics to the south. He came to believe that the only solid way to build friendship was to help the Latin Americans help themselves. So impressed was Mr. Rockefeller by the opportunities for promoting

were before the war. Yet the people are miserable and resentful.

Perhaps the moral for Bold New Programmers is that you should not start teaching a man to swim in deep water if you are not willing to stay close to his side until he has learned

It is interesting that the first practical proposals for putting the economic aspects of the Good Neighbor policy back on its feet came not from politicians but from businessmen. Business had a great and growing stake in the welfare of the southern republics. The greater part of $900,000,000 sent abroad by United States investors during 1948 went to Latin America. Growing social unrest and frequent revolutions represented hazards to these and earlier investments Intervention being a quarter of a century out of date, the most practical alternative was to help recreate economic health in Latin America.

When asked for suggested medicines, some Latin Americans proposed a western hemisphere version of the Marshall Plan, with the United States extending vast government funds for Latin American recovery The idea did not appeal to the North American business community. It tended, rather, to agree with Kirkwood Donavin, executive secretary of the Inter-American Council of Commerce and Production. Donavin suggested at a plenary session of the Council in September, 1948, that while small interest-bearing loans from the Export-Import Bank might be beneficial "for the express purpose of developing basic conditions, such as hydroelectric power, transportation, and rejuvenation of soil," other economic development should be left to private enterprise. The North American objection to regional Marshall Plans was summarized at the same meeting by James S. Kemper, chairman of the Lumbermen's Casualty Company, who pointed out that these "contemplate economic arrangements by governments, touching trade, production, distribution, consumption, and the employment of capital, and *all this moves* us toward a planned world."

One Latin American speaker proposed great pools of private capital to *finance industrial development*, as an alternative to government loans. The general United States reaction was that

Latin American self-help that at the end of the war he established two corporations aimed specifically at strengthening the basic economies of underdeveloped areas, beginning in Venezuela and Brazil. Rockefeller did not start by setting up factories; before you can have sound industrialization, he believed, you must have sound men and women, sound communications, sound agricultural techniques. These he set out to develop.

The International Basic Economy Corporation and the Venezuelan Basic Economy Corporation now operate on $7,000,000 from the Rockefeller brothers and $11,000,000 supplied by the Venezuelan government, American corporations, and individual investors By 1949 there were nine operating companies, each following the basic Rockefeller formula—millions for self-development but not one cent for charity. Company experts asked Brazil and Venezuela, "What industries do you need? What are your bottlenecks?" They then decided whether the situation could be improved at a profit—and frequently found that it could.

A few IBEC and VBEC operations:

1. Brazil needed more grain. Rockefeller took over a farm in Santa Rita, São Paulo, and planted it to a disease-resistant, hybrid corn which he sold to farmers. It increased their yields by 20 per cent.

2. Shipped in sacks, grain rotted. Handling costs were astronomical—65 cents and more a bushel. Rockefeller built elevators where corn could be dried and fumigated for bulk shipment. The result: handling costs are expected to drop more than 50 per cent.

3. In 1947 half of Brazil's hogs were killed by cholera. Rockefeller imported a new breed of hog, cholera-proofed. On a 300-acre farm his men showed how hogs could be raised more efficiently. Soon farmers all over Brazil were beginning to buy Rockefeller hogs and adopt his techniques.

hemisphere as well. Missions were sent in 1949 to Afghanistan, Iran, the Philippines, Siam, Syria, China, Lebanon, Iraq, Saudi-Arabia, Egypt, and Greece

The Institute of Inter-American Affairs could present an equally impressive record of achievement. A government-owned corporation since August, 1947, it has been operating under Dillon S. Myer on the modest budget of $5,000,000 a year. The IIAA employs about 300 men and women, of whom two thirds spend their time in other American republics helping direct the work of 10,000 Latin American technicians on several hundred active projects. Control of each program is exercised locally through a special department in the appropriate ministry of health, agriculture, or education, with the head of the United States field party generally administering it. Programs usually run from three to five years, American aid in each case being covered by a contract between the host country and the Institute. A long-range sanitation program in the Amazon Valley is expected to require ten years before the water supply and sewage systems are ready for Brazilian operation and maintenance.

Typical projects are those in Colombia and Paraguay. The *New York Times* on February 22, 1949, reported

> In the Colombia health project a field party of seven persons from the United States gives consultation service to 255 Colombian professional and technical personnel and 350 unskilled workers. Eight hospitals and seven health centers have been constructed, a national school of nursing has been built and equipped, and a national institute of epidemiology has been made ready. The three main ports of the country have been made sanitary. A permanent anti malaria program has been set up in four areas, with periodic spraying of DDT in thirty-five municipalities. Sewerage systems have been constructed in two cities. The health centers have started programs for control of tuberculosis and venereal diseases, and are now about to start a campaign for the eradication of goiter (a special problem in Colombia) and for control of typhus in the port areas.
>
> The co-operative agricultural program in Paraguay conducts a livestock ranch of 27,000 acres to demonstrate management practices, a community dairy demonstrates pasteurization of milk and dairy management, a 500-acre farm serves as a national institute of agronomy; a credit program is run through the Paraguayan Bank of Agriculture, a resettlement project is under way and grain elevators and a cold storage plant are operated

panies which fail to make a profit will be liquidated. A company which cannot make money on its merits, in Rockefeller's belief, is no good to itself or anybody else. But he is not too worried. He approached the end of 1949 with his entire operation in the black—and 1950 looked better yet. "He would have to be terribly inefficient," commented one observer, "not to be able to cut food handling costs in the tropics."

"We want capitalism to serve as an irrigation system for the financially arid areas of the world," Rockefeller is fond of remarking. It would perhaps be more exact to say that he wants capital investment to serve as a well which, driven deep enough, will tap the underground springs of those arid areas. For in the end they can live and prosper only according to their own resources and potentialities. What outside capital can do, given the proper circumstances, is to let the resources and potentialities gush forth.

Of the three forms of United States government co-operation with Latin America, the one which is least costly, and which has seemed to work most successfully, has been that of technical aid. The ten-year-old Department of Agriculture program, for instance, has cost this country less than $400,000 a year; yet by 1949 it had resulted in research and demonstrational projects in 15 Latin American countries—Argentina, Bolivia, Costa Rica, Brazil, Colombia, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Nicaragua, Panama, and Peru.

Latin American governments were so delighted with the results in increased production of better crops that they increased their financial support from $500,000 in 1943 to an estimated $1,178,000 in 1948—an average of about $3 for every $1 put up by the United States.

The Department of Agriculture was delighted, too Co-operation was paying out not only through better relations but also through better trade, for the revenue from the new crops tended to go for services and goods from the United States. It was decided to extend agricultural assistance to countries of the eastern

hemisphere as well Missions were sent in 1949 to Afghanistan, Iran, the Philippines, Siam, Syria, China, Lebanon, Iraq, Saudi-Arabia, Egypt, and Greece.

The Institute of Inter-American Affairs could present an equally impressive record of achievement. A government-owned corporation since August, 1947, it has been operating under Dillon S Myer on the modest budget of $5,000,000 a year. The IIAA employs about 300 men and women, of whom two thirds spend their time in other American republics helping direct the work of 10,000 Latin American technicians on several hundred active projects Control of each program is exercised locally through a special department in the appropriate ministry of health, agriculture, or education, with the head of the United States field party generally administering it. Programs usually run from three to five years, American aid in each case being covered by a contract between the host country and the Institute. A long-range sanitation program in the Amazon Valley is expected to require ten years before the water supply and sewage systems are ready for Brazilian operation and maintenance.

Typical projects are those in Colombia and Paraguay. The *New York Times* on February 22, 1949, reported·

> In the Colombia health project, a field party of seven persons from the United States gives consultation service to 255 Colombian professional and technical personnel and 350 unskilled workers Eight hospitals and seven health centers have been constructed, a national school of nursing has been built and equipped, and a national institute of epidemiology has been made ready The three main ports of the country have been made sanitary A permanent anti-malaria program has been set up in four areas, with periodic spraying of DDT in thirty-five municipalities Sewerage systems have been constructed in two cities The health centers have started programs for control of tuberculosis and venereal diseases, and are now about to start a campaign for the eradication of goiter (a special problem in Colombia) and for control of typhus in the port areas
>
> The co-operative agricultural program in Paraguay conducts a livestock ranch of 27 000 acres to demonstrate management practices, a community dairy demonstrates pasteurization of milk and dairy management, a 500-acre farm serves as a national institute of agronomy, a credit program is run through the Paraguayan Bank of Agriculture, a resettlement project is under way and grain elevators and a cold-storage plant are operated

panies which fail to make a profit will be liquidated. A company which cannot make money on its merits, in Rockefeller's belief, is no good to itself or anybody else. But he is not too worried. He approached the end of 1949 with his entire operation in the black—and 1950 looked better yet. "He would have to be terribly inefficient," commented one observer, "not to be able to cut food handling costs in the tropics."

"We want capitalism to serve as an irrigation system for the financially arid areas of the world," Rockefeller is fond of remarking. It would perhaps be more exact to say that he wants capital investment to serve as a well which, driven deep enough, will tap the underground springs of those arid areas. For in the end they can live and prosper only according to their own resources and potentialities. What outside capital can do, given the proper circumstances, is to let the resources and potentialities gush forth.

Of the three forms of United States government co-operation with Latin America, the one which is least costly, and which has seemed to work most successfully, has been that of technical aid. The ten-year-old Department of Agriculture program, for instance, has cost this country less than $400,000 a year; yet by 1949 it had resulted in research and demonstrational projects in 15 Latin American countries—Argentina, Bolivia, Costa Rica, Brazil, Colombia, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Nicaragua, Panama, and Peru.

Latin American governments were so delighted with the results in increased production of better crops that they increased their financial support from $500,000 in 1943 to an estimated $1,178,000 in 1948—an average of about $3 for every $1 put up by the United States.

The Department of Agriculture was delighted, too. Co-operation was paying out not only through better relations but also through better trade, for the revenue from the new crops tended to go for services and goods from the United States. It was decided to extend agricultural assistance to countries of the eastern

Latin American countries again indicated their approval in the most unmistakable way—by carrying most of the expense

Here was an *inexpensive program* which *really* worked, and which rather than pap-feeding its recipients stimulated them to further effort of their own Here, in fact, was a working prototype of one vital phase of the *Bold New Program* It was so recognized by President Truman in February, 1949, when he asked Congress not only to extend the life of the IIAA for five years (its former charter was to expire July 1, 1950) but to increase its budget from $5,000,000 to $10,000,000 a year The President commented:

> These are programs that, over the years, have been tried, tested, and found good. . . . I stated recently that we must embark on a program for *making the benefits of our scientific advances and industrial progress* available for the improvement and growth of underdeveloped areas. Within the western hemisphere we have already built firm foundations for this program, and have already begun to demonstrate the benefits that *can flow from such a program.* *Each of the American republics, the United States included, is helped in its own progress by the improvement* of economic, social, and cultural conditions in the others By continuing this international co-operation for raising the standard of living for all the peoples in the Americas, the United States can give further, practical form to the high purposes of our policy

The emphasis of Point 4 on technical aid, and the suggestion that in general the function of the American government shall be to furnish technical leadership while the co-operating country carries the major share of the cost, reflect not only our finite economic capacity, but the fact that in *Good Neighbor* activities these methods have proven both safe and effective. If we now *consider* granting such inducements as special income-tax reductions to American investors who participate in socially useful projects abroad, it is because otherwise they may put their money into socially useless projects—or not invest at all. Bilateral treaties to assure investors in underdeveloped areas against abnormal risks, to guarantee the convertibility of profit into dollars, to limit double taxation, are similarly the product of common sense backed by fresh *Good Neighbor* experience *It*

better served if she had worried about producing eggs before she worried about producing rayon cloth.

The striking aspect of our experience in Latin America, however, is perhaps not that it has accomplished so little but that it has accomplished so much. That Latin Americans have been going through a postwar readjustment is less significant than the fact that the readjustment leaves them on an economic plateau considerably above that of 1939.

Many of their griefs and fears may be compared to those of a yachtsman who, after years in a bay, ventures out into the open sea. There is no easy and foolproof way to gain the confidence and skill he requires; but in venturing forth at all he has taken the one indispensable step. To ignore the recent advances of Latin Americans because of old problems still unsolved or new problems now arising would result in doing nothing because of all that remains to be done.

This is far from saying that Latin America's problems are not real and serious. They are. But the whole course of industrialization, as any recently industrialized country can remember, consists of one stormy crisis after another.

It may be hoped that as bellwether of the Bold New Program the Good Neighbor Policy will receive fresh and thoughtful attention in the months just ahead.

That attention might profitably turn to a three-year program recently put forward by an anonymous United States official with several decades of experience in Latin America His omnibus approach includes the following proposals

1. The earmarking of some official funds for "sound co-operative projects in Latin American countries which will agree to do something tangible to encourage United States and other foreign investments."
2. Easing income-tax requirements for corporations and individuals doing business in Latin America.
3. Insuring private United States loans for trade and industry.
4. Expanding the medical and sanitary program of the In-

stitute of Inter-American Affairs, and creating machinery to handle activities which fall outside the scope of present agencies.

5. Encouraging industrial fellowships for Latin Americans with United States firms and corporations

6. Making outright grants for highways which would open up productive regions, provided that the grants are matched by funds from the countries benefited.

"Such a program, properly correlated," says the official, "should be an investment and not a gamble or loss Let us offer it voluntarily in exchange for the liberalizing of certain nationalistic practices in Latin America and the encouraging of private capital, not with the idea of making over Latin America in our own image but solely of helping it to stand on its own feet by eradicating the cancer of economic insecurity and low living standards with which it is now afflicted. And in so doing we will remove an element of instability at our very doorstep and foster common hemispheric and world interests."[1]

Whatever the form that future co-operation with Latin America may take, one point is clear The value of the money and technical assistance we furnish will be dependent on the extent to which it wakens the creative energies of the Latin Americans Eventually they must find most of the needed capital themselves If the future of Latin Americans is to be predicated on the amount of money, public or private, that we can free from domestic purposes for use outside our own border, then they have no *future* If, as the National Association of Manufacturers estimates, we were to have $2,000,000,000 a year of private capital available for foreign investment each year after 1952, and if all those $2,000,000,000 went to Latin America, letting the rest of the world go hang, that huge sum would still be only a drop in the bucket. Capital sowed by the wayside and in stony places will vanish with no worthwhile results

But sown in good ground, the money which Americans can

[1] *New York Herald Tribune* January 26, 1949

better served if she had worried about producing eggs before she worried about producing rayon cloth.

The striking aspect of our experience in Latin America, however, is perhaps not that it has accomplished so little but that it has accomplished so much. That Latin Americans have been going through a postwar readjustment is less significant than the fact that the readjustment leaves them on an economic plateau considerably above that of 1939.

Many of their griefs and fears may be compared to those of a yachtsman who, after years in a bay, ventures out into the open sea. There is no easy and foolproof way to gain the confidence and skill he requires, but in venturing forth at all he has taken the one indispensable step To ignore the recent advances of Latin Americans because of old problems still unsolved or new problems now arising would result in doing nothing because of all that remains to be done.

This is far from saying that Latin America's problems are not real and serious They are But the whole course of industrialization, as any recently industrialized country can remember, consists of one stormy crisis after another

It may be hoped that as bellwether of the Bold New Program the Good Neighbor Policy will receive fresh and thoughtful attention in the months just ahead

That attention might profitably turn to a three-year program recently put forward by an anonymous United States official with several decades of experience in Latin America. His omnibus approach includes the following proposals·

1. The earmarking of some official funds for "sound co-operative projects in Latin American countries which will agree to do something tangible to encourage United States and other foreign investments."

2. Easing income-tax requirements for corporations and individuals doing business in Latin America.

3. Insuring private United States loans for trade and industry.

4. Expanding the medical and sanitary program of the In-

stitute of Inter-American Affairs, and creating machinery to handle activities which fall outside the scope of present agencies

5. Encouraging industrial fellowships for Latin Americans with United States firms and corporations.

6. Making outright grants for highways which would open up productive regions, provided that the grants are matched by funds from the countries benefited

"Such a program, properly correlated," says the official, "should be an investment and not a gamble or loss. Let us offer it voluntarily in exchange for the liberalizing of certain nationalistic practices in Latin America and the encouraging of private capital, not with the idea of making over Latin America in our own image but solely of helping it to stand on its own feet by eradicating the cancer of economic insecurity and low living standards with which it is now afflicted. And in so doing we will remove an element of instability at our very doorstep and foster common hemispheric and world interests"[1]

Whatever the form that future co-operation with Latin America may take, one point is clear. The value of the money and technical assistance we furnish will be dependent on the extent to which it wakens the creative energies of the Latin Americans Eventually they must find most of the needed capital themselves If the future of Latin Americans is to be predicated on the amount of money, public or private, that we can free from domestic purposes for use outside our own border, then they have no future If, as the National Association of Manufacturers estimates, we were to have $2,000,000,000 a year of private capital available for foreign investment each year after 1952, and if all those $2,000,000,000 went to Latin America, letting the rest of the world go hang, that huge sum would still be only a drop in the bucket. Capital sowed by the wayside and in stony places will vanish with no worthwhile results

But sown in good ground, the money which Americans can

[1] *New York Herald Tribune*, January 26, 1949

PART II

Introduction

WHEN THE Portuguese navigator António Galvão proposed in 1550 that a canal be dug across the Isthmus of Panama, he could not know it would take three hundred and sixty-four years to bring his scheme to completion. By 1880, when work was actually begun by the Frenchman Ferdinand de Lesseps, the necessary engineering techniques were widely available; but even then the project failed because of extravagance, corruption—and yellow fever.

Before there could be any practical prospect of completing the Panama Canal, there had to be sanitation, liquidation of disease, modernization of railways, provision of an adequate food and water supply, recruitment and training of a skilled working force, establishment of a capable administration. Without these, investment of magnificent engineering skill and billions of francs in the digging of the great ditch was like trying to catch water in a sieve.

In many underdeveloped areas of the world today it would be similarly pointless to start at once pouring huge sums of money into engineering or industrial projects. First the sieve must be caulked. The World Bank, with hundreds of millions of dollars ready to invest, is held back not by lack of desire but by lack of bankable projects. The fact that a nation applies for a loan of $50,000,000, or $500,000,000, is by no means proof that the money would be put to good use.

Today the opportunities for either government loans or private investment abroad for industrial development are limited. They are limited by hostile attitudes toward foreign capital. They are limited by some recipient countries' lack of dollar exchange. They are limited by local weaknesses in health, labor supply, food, fuel, transportation, purchasing power, public administration.

invest, the skills which they can teach, and the incentives which they can instill may bear as fruit a world where poverty, frustration, and enmity are replaced by abundance, fulfillment, and peace.

is the best possible business. These are important lessons. By passing them on we can promote an industrialization that is *humane rather than brutal.* We can prevent the imposition of advanced techniques on an unready people—an imposition which is likely to lead to either tyranny at home, as in the case of the Soviet Union, or imperialism from abroad.

Under a dictatorship it may be possible to implant a heavy industry on a farming population with no in-between steps. In a democracy, however, that is an unlikely process, because heavy industry is an investment in the future. Of itself it fills no bellies, puts clothes on no backs, roofs no houses Light industry, producing consumer goods, tends to precede or accompany it.

And there have to be roads, to get farm goods to market. And even before roads there have to be improvements in the farms themselves Without a healthy farm economy, money invested in ambitious factories would be probably lost and certainly *more harmful than beneficial in its immediate effects.*

"What people need to realize," comments Norris E Dodd, "is that you don't start with vast, expensive projects of modernization. If we could bring half the world from the era of the sickle to the era of the scythe, we would have moved ahead one hundred years in one jump"

Reduction of waste in storage, for instance, recently increased the grain available to Guatemalans by a fourth, before any increase in output Experiment stations in China have taught prevention and cure of poultry diseases to tens of thousands of peasants, who to learn the new techniques were willing to walk miles with sick chickens hung over their backs

On a 1949 tour of world food-producing areas, Mr. Dodd found that rice in India was still being laboriously threshed entirely by hand, though in Japan a little machine made of galvanized iron and a few nails had greatly increased the speed of the operation. General Douglas MacArthur, at Mr. Dodd's suggestion, presented one of these hand threshers to an Indian representative in Japan. India is now adapting them for her

Industrial investment, public or private, requires improvement of these basic conditions. It requires competent and thorough engineering plans. It requires competence in administering economic and fiscal policy.

The chapters which follow therefore cover two separate stages in the evolution of Point 4 and the Bold New Program. They give examples in many lands of the great development projects which have been proposed and in some instances undertaken, but they list also the improvements in basic economy which form the indispensable framework for most of these developments.

Point 4 will have a system of priorities. In the first years its application will be limited There will not be technicians enough to go around. There will not be money enough. Even as technicians and money become available, great areas of the world will remain shut off from the benefits of the Bold New Program by their own volition. Point 4 will not operate in China, for instance, or Russia, or Eastern Europe.

But these areas (though by no means all the countries in them) will be touched on in the following pages, because the need of a Russia or a China for the principles behind Point 4 is no less urgent than the need of Africa or the Middle East. Western Europe, too, will be examined, the joint principles of technical improvement and private investment are as applicable to developed as to backward areas

Economic development is a process of generations. It starts slowly.

The readying process, moreover, cannot be simply one of teaching technical skills. Hearts as well as minds need tilling and fertilization. In our own haphazard industrialization Americans have learned many lessons that are unrelated to physical techniques. We have learned that industrialization is a social as well as an economic process; that it must serve the general welfare as well as the owner's pocketbook. We have learned that the widest possible spreading of the benefits of industrialization

is the best possible business These are important lessons. By passing them on we can promote an industrialization that is humane rather than brutal We can prevent the imposition of advanced techniques on an unready people—an imposition which is likely to lead to either tyranny at home, as in the case of the Soviet Union, or imperialism from abroad

Under a dictatorship it may be possible to implant a heavy industry on a farming population with no in-between steps In a democracy, however, that is an unlikely process, because heavy industry is an investment in the future. Of itself it fills no bellies, puts clothes on no backs, roofs no houses Light industry, producing consumer goods, tends to precede or accompany it

And there have to be roads, to get farm goods to market And even before roads there have to be improvements in the farms themselves Without a healthy farm economy, money invested in ambitious factories would be probably lost and certainly more harmful than beneficial in its immediate effects.

"What people need to realize," comments Norris E. Dodd, "is that you don't start with vast, expensive projects of modernization. If we could bring half the world from the era of the sickle to the era of the scythe, we would have moved ahead one hundred years in one jump"

Reduction of waste in storage, for instance, recently increased the grain available to Guatemalans by a fourth, before any increase in output Experiment stations in China have taught prevention and cure of poultry diseases to tens of thousands of peasants, who to learn the new techniques were willing to walk miles with sick chickens hung over their backs

On a 1949 tour of world food-producing areas, Mr. Dodd found that rice in India was still being laboriously threshed entirely by hand, though in Japan a little machine made of galvanized iron and a few nails had greatly increased the speed of the operation. General Douglas MacArthur, at Mr. Dodd's suggestion, presented one of these hand-threshers to an Indian representative in Japan. India is now adapting them for her

Industrial investment, public or private, requires improvement of these basic conditions. It requires competent and thorough engineering plans It requires competence in administering economic and fiscal policy

The chapters which follow therefore cover two separate stages in the evolution of Point 4 and the Bold New Program. They give examples in many lands of the great development projects which have been proposed and in some instances undertaken; but they list also the improvements in basic economy which form the indispensable framework for most of these developments

Point 4 will have a system of priorities In the first years its application will be limited There will not be technicians enough to go around There will not be money enough Even as technicians and money become available, great areas of the world will remain shut off from the benefits of the Bold New Program by their own volition Point 4 will not operate in China, for instance, or Russia, or Eastern Europe

But these areas (though by no means all the countries in them) will be touched on in the following pages, because the need of a Russia or a China for the principles behind Point 4 is no less urgent than the need of Africa or the Middle East Western Europe, too, will be examined, the joint principles of technical improvement and private investment are as applicable to developed as to backward areas

Economic development is a process of generations It starts slowly

The readying process, moreover, cannot be simply one of teaching technical skills Hearts as well as minds need tilling and fertilization In our own haphazard industrialization Americans have learned many lessons that are unrelated to physical techniques We have learned that industrialization is a social as well as an economic process, that it must serve the general welfare as well as the owner's pocketbook We have learned that the widest possible spreading of the benefits of industrialization

individuals the benefits of mass purchasing power; they lack credit societies to make money available for needed goods and equipment, they lack roads to take their produce to market The productive energy of 300,000,000 of the world's people is minimized by malaria; another 100,000,000 are sick or dying of blood flukes, thousands of children each year are born blind of gonorrhea or are congenitally syphilitic; 1,000,000,000 grownups cannot read, cannot write, can scarcely add or subtract.

A program for basic improvements in health, agriculture, literacy, land tenure and social customs is the first essential for backward areas In some instances it will be possible simultaneously to launch TVA-like projects to harness unused natural and human resources Many of the most widely discussed development programs, however, are still a number of years in the future Says the United Nations Department of Economic Affairs.

> First, many of the programs are more impressive on paper than in reality There are many obstacles to overcome between drawing up a program of action and executing it in terms of bricks and mortar.
>
> Second, many problems are of such pressing nature that action has to be taken quickly, often without a full appraisal of its effects in related fields Even though such action may occasionally delay the elaboration of a comprehensive and closely interwoven scheme, this course may be worth encouraging since even small beginnings can be important in opening the way to larger undertakings in the future [1]

The dream must still precede the doing. If the men and women of underdeveloped areas had lost the capacity for dreaming, their lot would be hopeless. They have not; and what they have dreamed will some day become reality, as surely as António Galvão's dream turned into the Panama Canal. With our aid and fellowship, moreover, projects that might have waited for centuries can be accomplished in decades.

When the basic economies are ready, industrialization of

[1] *Economic Development in Selected Countries* (Lake Success United Nations Department of Economic Affairs, 1947).

peasants. During the next ten years, the hand thresher may have more effect on India's rice production than any of her great irrigation projects.

Rice is the staple of half the world's people. If the rest of Asia could attain rice yields approximating those of Japan, output of the Far East would rise from 130,000,000 to over 300,000,000 tons. Such an increase is possible through improved rice varieties—and nutritional value can be increased still further by better milling practices.

The first and indispensable job is the caulking of the sieve. Point 4 will therefore disappoint those who feel that the world should plunge immediately into a development program so tremendous as to keep all of mankind's idle hands out of mischief. Some of these persons blame Point 4 not only for seeking ultimately to enlist American businessmen, a step which they appear to consider as obscurely criminal, but for being generally too cautious, too piddling. They blink at the fact that many of the industrial and technical accomplishments in which Americans take the greatest pride would not yet be applicable to all underdeveloped countries; that the needs of many of these countries are relatively simple, while we are accustomed to working with complex machinery, that in the first stages of Point 4 perhaps not more than 20 per cent of our famed know-how will be directly applicable abroad.

Many backward areas have no idea themselves of their economic potential. A State Department survey recently showed that of 32 countries in Latin America, the Middle East, and East Asia, only two had reliable employment figures. Only eight knew the amount of their external trade or national income, or their quantities of livestock. Just as India, for instance, has little idea of how much beryl, mica, and other rare minerals are available there, so Brazil is but vaguely aware of the tremendous oil shale deposits that exist under her forests.

Many underdeveloped countries literally do not know how to increase their food production, how to save their soil and trees, how to make use of their water, how to safeguard their cattle, how to catch their fish. They lack co-operatives to give

individuals the benefits of mass purchasing power, they lack credit societies to make money available for needed goods and equipment; they lack roads to take their produce to market. The productive energy of 300,000,000 of the world's people is minimized by malaria; another 100,000,000 are sick or dying of blood flukes; thousands of children each year are born blind of gonorrhea or are congenitally syphilitic; 1,000,000,000 grownups cannot read, cannot write, can scarcely add or subtract

A program for basic improvements in health, agriculture, literacy, land tenure and social customs is the first essential for backward areas In some instances it will be possible simultaneously to launch TVA-like projects to harness unused natural and human resources Many of the most widely discussed development programs, however, are still a number of years in the future. Says the United Nations Department of Economic Affairs:

> First, many of the programs are more impressive on paper than in reality There are many obstacles to overcome between drawing up a program of action and executing it in terms of bricks and mortar.
>
> Second, many problems are of such pressing nature that action has to be taken quickly, often without a full appraisal of its effects in related fields Even though such action may occasionally delay the elaboration of a comprehensive and closely interwoven scheme, this course may be worth encouraging since even small beginnings can be important in opening the way to larger undertakings in the future [1]

The dream must still precede the doing If the men and women of underdeveloped areas had lost the capacity for dreaming, their lot would be hopeless They have not; and what they have dreamed will some day become reality, as surely as António Galvão s dream turned into the Panama Canal. With our aid and fellowship, moreover, projects that might have waited for centuries can be accomplished in decades.

When the basic economies are ready, industrialization of

[1] Economic Development in Selected Countries (Lake Success United Nations Department of Economic Affairs, 1947).

varied kinds and degrees is inevitable. In the past, industrialization generally took place by guess and by golly. The fit industries survived and the rest fell by the wayside. The economic organism may have had grave defects, but it was a living creature, complete in all its parts. The pattern for the future in most underdeveloped areas will include a far greater degree of government planning and control There will be frequent and strong temptation to impose industrialization by fiat on a relatively unready region. That is a delicate and risky business The architect may design a fine heart, stomach, and bowels, but forget the lungs or the white corpuscles. Or like Frankenstein he may omit the soul and so create a monster.

It would be easy, in our preoccupation with the ultimate aims of the Bold New Program, to shrug off the painstaking work which must come first It would be equally easy, in attending to all the necessary details, to lose sight of the great objective we are seeking. The nicety with which Point 4 avoids these opposite errors will be the measure of its failure or success.

6

Latin America in Flux

RECENTLY VICTOR RAUL HAYA DE LA TORRE, leader of Peru's Apra Party, visited Albert Einstein at Princeton While the scientist solemnly nodded agreement, Haya de la Torre expounded a theory of relativity applied to history· the United States and Western Europe, he said, live in the twentieth century, as does coastal Peru; but Peru's Indian highlands are sixteenth century, and the Amazon Basin is still prehistoric. Haya de la Torre concluded that programs for developing backward areas cannot be applied by rule of thumb, but must vary according to the historic stage of each region involved.

It is obvious that the 20 Latin American republics differ tremendously in climate, man power, resources, economic and social progress. Argentina, Brazil, Chile, Cuba, Mexico, Uruguay

have passed through the initial stages of industrialization. Central America is still virtually 100 per cent agrarian.

In Latin America as a whole, two-thirds of the inhabitants depend on agriculture for a livelihood—most of them subsisting entirely on what they can grow themselves. In 1938, when the per capita income of Americans[1] was $510, that of Argentines was $156; of Chileans, $126, of Mexicans, $60; of Bolivians, $39, of Brazilians, $33.

As a group, however, these underdeveloped lands are among earth's richest storehouses. Latin America supplies the world with all its bananas, coffee, and sisal, with "43 per cent of [its] silver, 31 per cent of its cocoa, 26 per cent of its sugar, 20 per cent of its copper, 20 per cent of its hides, 18 per cent of its tin, 16 per cent of its wool, 15 per cent of its petroleum."[2] Rubber is indigenous to the Amazon Valley, and natural nitrates are to be found only on the west coast of South America.

This storehouse occupies some 9,000,000 square miles of the earth's surface—three times the area of the continental United States. Its population, like ours, is about 150,000,000, which means that we support three times as many inhabitants per square mile as Latin America does. The majority of Latin Americans are of mixed white and Indian blood. In some countries, such as Brazil, there is a considerable Negro admixture. In others most of the people are pure white.

But disparate as the Latin Americans are, they have an obsession in common. They are determined to pull themselves into the twentieth century, by their bootstraps if necessary. Every Latin American government, however small and poor the country may be, has its own plan of economic and industrial development.

Some, indeed, have even cut across national boundaries to achieve common goals. The Greater Colombia Merchant Marine, for instance, is owned 45 per cent by Colombia, 45 per

[1] Forgive me for eschewing the cumbersome—and itself imprecise—phrase "North Americans" when referring to citizens of the United States.
[2] Op. cit.

varied kinds and degrees is inevitable. In the past, industrialization generally took place by guess and by golly. The fit industries survived and the rest fell by the wayside. The economic organism may have had grave defects, but it was a living creature, complete in all its parts. The pattern for the future in most underdeveloped areas will include a far greater degree of government planning and control. There will be frequent and strong temptation to impose industrialization by fiat on a relatively unready region. That is a delicate and risky business. The architect may design a fine heart, stomach, and bowels, but forget the lungs or the white corpuscles. Or like Frankenstein he may omit the soul and so create a monster.

It would be easy, in our preoccupation with the ultimate aims of the Bold New Program, to shrug off the painstaking work which must come first. It would be equally easy, in attending to all the necessary details, to lose sight of the great objective we are seeking. The nicety with which Point 4 avoids these opposite errors will be the measure of its failure or success.

6

Latin America in Flux

RECENTLY VICTOR RAUL HAYA DE LA TORRE, leader of Peru's Apra Party, visited Albert Einstein at Princeton. While the scientist solemnly nodded agreement, Haya de la Torre expounded a theory of relativity applied to history: the United States and Western Europe, he said, live in the twentieth century, as does coastal Peru; but Peru's Indian highlands are sixteenth century, and the Amazon Basin is still prehistoric. Haya de la Torre concluded that programs for developing backward areas cannot be applied by rule of thumb, but must vary according to the historic stage of each region involved.

It is obvious that the 20 Latin American republics differ tremendously in climate, man power, resources, economic and social progress. Argentina, Brazil, Chile, Cuba, Mexico, Uruguay

have passed through the initial stages of industrialization. Central America is still virtually 100 per cent agrarian

In Latin America as a whole, two-thirds of the inhabitants depend on agriculture for a livelihood—most of them subsisting entirely on what they can grow themselves. In 1938, when the per capita income of Americans[1] was $510, that of Argentines was $156; of Chileans, $126, of Mexicans, $60; of Bolivians, $39, of Brazilians, $33.

As a group, however, these underdeveloped lands are among earth's richest storehouses Latin America supplies the world with all its bananas, coffee, and sisal, with "43 per cent of [its] silver, 31 per cent of its cocoa, 26 per cent of its sugar, 20 per cent of its copper, 20 per cent of its hides, 18 per cent of its tin, 16 per cent of its wool, 15 per cent of its petroleum."[2] Rubber is indigenous to the Amazon Valley, and natural nitrates are to be found only on the west coast of South America.

This storehouse occupies some 9,000,000 square miles of the earth's surface—three times the area of the continental United States Its population, like ours, is about 150,000,000, which means that we support three times as many inhabitants per square mile as Latin America does. The majority of Latin Americans are of mixed white and Indian blood In some countries, such as Brazil, there is a considerable Negro admixture. In others most of the people are pure white.

But disparate as the Latin Americans are, they have an obsession in common They are determined to pull themselves into the twentieth century, by their bootstraps if necessary. Every Latin American government, however small and poor the country may be, has its own plan of economic and industrial development.

Some, indeed, have even cut across national boundaries to achieve common goals The Greater Colombia Merchant Marine, for instance, is owned 45 per cent by Colombia, 45 per

[1] Forgive me for eschewing the cumbersome—and itself imprecise—phrase "North Americans" when referring to citizens of the United States

[2] Op cit

varied kinds and degrees is inevitable. In the past, industrialization generally took place by guess and by golly. The fit industries survived and the rest fell by the wayside. The economic organism may have had grave defects, but it was a living creature, complete in all its parts. The pattern for the future in most underdeveloped areas will include a far greater degree of government planning and control. There will be frequent and strong temptation to impose industrialization by fiat on a relatively unready region. That is a delicate and risky business. The architect may design a fine heart, stomach, and bowels, but forget the lungs or the white corpuscles. Or like Frankenstein he may omit the soul and so create a monster.

It would be easy, in our preoccupation with the ultimate aims of the Bold New Program, to shrug off the painstaking work which must come first. It would be equally easy, in attending to all the necessary details, to lose sight of the great objective we are seeking. The nicety with which Point 4 avoids these opposite errors will be the measure of its failure or success.

6

Latin America in Flux

RECENTLY VICTOR RAUL HAYA DE LA TORRE, leader of Peru's Apra Party, visited Albert Einstein at Princeton. While the scientist solemnly nodded agreement, Haya de la Torre expounded a theory of relativity applied to history: the United States and Western Europe, he said, live in the twentieth century, as does coastal Peru; but Peru's Indian highlands are sixteenth century, and the Amazon Basin is still prehistoric. Haya de la Torre concluded that programs for developing backward areas cannot be applied by rule of thumb, but must vary according to the historic stage of each region involved.

It is obvious that the 20 Latin American republics differ tremendously in climate, man power, resources, economic and social progress. Argentina, Brazil, Chile, Cuba, Mexico, Uruguay

government can hardly wait for their reports before planning new roads to tap and create new pioneer regions. Elsewhere, too, Peru is building trans-Andean highways and supporting the systematic development of such other resources as oil, minerals, forest products, and water power.[4]

Most of the Latin American countries are seeking to speed their progress through national or regional development corporations In detail these corporations differ mightily; but in purpose they are identical They are designed to accomplish for Latin America in a generation the agricultural and industrial development which the United States carried out in a hundred and fifty years

Let us see what some of the prospects are.

BRAZIL

At the opposite end of the scale from the private basic-economy endeavors of Mr Rockefeller's IBEC are the tremendous modernization plans which have been promulgated by the Brazilian government. It is all very well, say the Brazilians, to put agricultural improvement before new industries; but as the third largest country on earth and the largest in the western hemisphere Brazil is going to industrialize while she agriculturalizes, or know the reason why She is going to be economically independent, even if home-grown steel should cost twice as much as steel imported from the United States In 1944 Brazil's Economic and Planning Commission laid down the broad outlines of a program designed to increase national income fivefold—from 40,000,000,000 cruzeiros (about $2,200,000,000) to 200,000,000,000 cruzeiros—inside of fifteen years

The defects of forced industrialization have come frequently and disagreeably to Brazilian attention. Recently, for instance, an American automobile manufacturer was approached to set up a plant in Brazil, taking advantage of steel produced by the great new Volta Redonda mill. He refused—because, he said, I might be able to make my bodies and engines all right, but how about spark plugs? How about distribution systems? Those

[4] *New Worlds Emerging* (New York, Duell, Sloan & Pearce, 1949)

nernment can hardly wait for their reports before planning new roads
tap and create new pioneer regions Elsewhere, too, Peru is building
ans-Andean highways and supporting the systematic development of
ach other resources as oil, minerals, forest products, and water-power.[4]

Most of the Latin American countries are seeking to speed heir progress through national or regional development corporations In detail these corporations differ mightily, but in purpose they are identical They are designed to accomplish for Latin America in a generation the agricultural and industrial development which the United States carried out in a hundred and fifty years

Let us see what some of the prospects are.

BRAZIL

At the opposite end of the scale from the private basic-economy endeavors of Mr Rockefeller's IBEC are the tremendous modernization plans which have been promulgated by the Brazilian government It is all very well, say the Brazilians, to put agricultural improvement before new industries, but as the third largest country on earth and the largest in the western hemisphere Brazil is going to industrialize while she agriculturalizes, or know the reason why. She is going to be economically independent, even if home-grown steel should cost twice as much as steel imported from the United States In 1944 Brazil's Economic and Planning Commission laid down the broad outlines of a program designed to increase national income fivefold—from 40,000,000,000 cruzeiros (about $2,200,000,000) to 200,000,000,000 cruzeiros—inside of fifteen years

The defects of forced industrialization have come frequently and disagreeably to Brazilian attention Recently, for instance, an American automobile manufacturer was approached to set up a plant in Brazil, taking advantage of steel produced by the great new Volta Redonda mill. He refused—because, he said, I might be able to make my bodies and engines all right, but how about spark plugs? How about distribution systems? Those

4 New Worlds Emerging (New York Duell, Sloan & Pearce, 1949)

as fired by the examples of Woolworth's and Macy's, and returned home determined to create a mass market by selling needed goods cheaply.

Even with the price of his wares marked down for quick turnover, however, sales were slow for lack of Brazilians with money. The obvious answer was installment buying—but that had been made a racket in Brazil and was in bad odor. Carvalho solved his dilemma by inventing Credario—"as dignified as a charge account, as convenient as an installment plan." Customers receive punch cards bearing credits for varying amounts, according to their financial standing. The card is to be paid for within ten months, meanwhile, the customer may wander at will through the store, buying all he pleases within the limit of his credit

Credario offices were opened all over the city A Exposição boomed Today 70 per cent of its business is done on credit; 300,000 Brazilian families use Credario.

By 1940, A Exposição was the largest store in Rio. Brazilians had scorned ready-made suits, Carvalho set up a tailoring establishment and proved that ready-made suits can be not only as good as tailor-made suits but a lot cheaper Brazilians did not give Christmas presents, Carvalho lured them into the habit by himself giving presents during the pre-Christmas season to everyone who made a purchase at his store He had admired American advertising, but he went the Americans one better; instead of buying a few hours on a radio station, he buys one station's time for a whole month each year to push his August sale Any purchaser approached by a man with a microphone, may be asked to say a few words about the wonderful bargain he has just bought During a typical A Exposição sale in 1948, men and women queued up for blocks hours before the store opened The women's store (Carvalho has spread to several buildings) closed seven times during one day to save customers from being crushed and to replenish emptied shelves.

Carvalho has given away 83 per cent of his stock to relatives —and is making more money than ever on what is left. In 1948 his stores grossed $10,000,000; by 1952 he hopes they will

was fired by the examples of Woolworth's and Macy's, and returned home determined to create a mass market by selling needed goods cheaply.

Even with the price of his wares marked down for quick turnover, however, sales were slow for lack of Brazilians with money. The obvious answer was installment buying—but that had been made a racket in Brazil and was in bad odor. Carvalho solved his dilemma by inventing Crediário—"as dignified as a charge account, as convenient as an installment plan." Customers receive punch cards bearing *credits* for varying amounts, according to their financial standing. The card is to be paid for within ten months; meanwhile, the customer may wander at will through the store, buying all he pleases within the limit of his credit

Crediário offices were opened all over the city. A Exposição boomed Today 70 per cent of its business is done on credit; 300,000 Brazilian families use Crediário.

By 1940, A Exposição was the largest store in Rio Brazilians had scorned ready-made suits, Carvalho set up a tailoring establishment and proved that ready-made suits can be not only as good as tailor-made suits but a lot cheaper Brazilians did not give Christmas presents, Carvalho lured them into the habit by himself giving presents during the pre-Christmas season to everyone who made a purchase at his store. He had admired American advertising, but he went the Americans one better; instead of buying a few hours on a radio station, he buys one station's time for a whole month each year to push his August sale Any purchaser, approached by a man with a microphone, may be asked to say a few words about the wonderful bargain he has just bought. During a typical A Exposição sale in 1948, men and women queued up for blocks hours before the store opened The women's store (Carvalho has spread to several buildings) closed seven times during one day to save customers from being crushed and to replenish emptied shelves.

Carvalho has given away 83 per cent of his stock to relatives —and is making more money than ever on what is left. In 1948 his stores grossed $10,000,000, by 1952 he hopes they will

gross twice that His workers receive top wages, free medical care, groceries at cost, pensions, an automatic raise of 50 cruzeiros ($2 70) a month for every child

And now he is laying plans for a business college where young Brazilians can learn modern business methods

The story of Lauro Carvalho deserves thoughtful study, not because it sounds strange to Americans but because it sounds so familiar A nation that can breed a Carvalho is bound sooner or later to develop mass consumption—which means mass production And there can be Carvalhos in every underdeveloped area of the world

To build Brazilian health, Brazilian literacy, Brazilian purchasing power, the *government* has entered on a program of many parts

Furthest advanced is the great new $70 000,000 steel plant at Volta Redonda, financed partly by the United States Export-Import Bank, partly by the Brazilian government, and partly ($16,500,000) by Brazilian individuals With domestic steel, Brazil will be able ultimately to construct and operate her own railroads, launch her own industries, supply steel products to a hinterland that includes half of South America

A second Brazilian resource is the tumultuous flow of the San Francisco River, which at the Paulo Affonso Falls has one of the most concentrated sources of hydroelectric power in the world Morris L Cooke, who in 1942 headed the American Technical Mission to Brazil, has estimated its electric potential at 750,000 kilowatts

Exploitation of the San Francisco would open all northeastern Brazil to immigration and industrialization So enthusiastic are the Brazilians over the prospect that they have taken the unprecedented step of writing a provision for the development of the San Francisco River Valley into their new constitution—and have set aside a fixed percentage of the national revenue to insure realization of the project

The San Francisco, running parallel to the coast, provides a

taries four monstrous dams are rising, backing up the water into great lakes. Dredged, the Papaloápam will be navigable from its mouth in the Gulf of Mexico to Tuxtepec, 149 miles inland.

A canal at Chacaltianguis will drain the swampy, infested lakes to the north. Part of the $300,000,000 earmarked for the project will go toward control of erosion, floods, and such tropical diseases as hookworm and malaria

Already well under way, the Papaloápam project will be completed within five years It will produce 250,000 kilowatts of electricity, increasing Mexico's installed capacity by nearly 25 per cent. The population of the region—now less than 200,000 —is expected to treble through immigration.

Between 1940 and 1945, Mexico increased the number of her factories from 13,510 to 28,513. She also turned vigorously to the nation's basic problem—that of gearing into her commercial economy the mestizos and Indians who comprise 70 per cent of the 21,000,000 Mexicans, 14,000,000 Mexicans, virtually isolated by primitive communications, still exert no influence whatever on consumer demand They are untouched by most health and social welfare projects The Carnegie Institute, investigating a remote Yucatan area in 1942, found that 77 per cent of its inhabitants died before reaching the age of fifteen.

Scarcely a fifth of all Mexicans today have access to electricity. At the end of 1945 a typical Mexican had exactly a tenth as much electricity at his disposal as an American had

To help remedy this situation, the Federal Electricity Commission in 1947 launched a program aimed at installing by 1952 new electric plants with a capacity of more than 800,000 kilowatts, at a cost of $265,100,000.

Some 50 per cent of the whole volume of Mexico's agricultural production is now provided by the irrigation of 3,000,000 rich acres In order to make the country self-supporting in basic foods, it is planned eventually to sextuple that figure, 3,000,000 additional acres should be under irrigation by 1952.

Mexico is driving hard for manufactures She is exempting new businesses from onerous taxation, setting up sturdy tariff

the winter, when they are not needed, instead of in the summer, when they are

Broken into seven regional programs, Chile's eighteen-year plan calls for exploiting more than 6,000,000 kilowatts of electric power—as much as the present generating capacity of all France.

Already electricity is flowing from one of the most tremendous installations in South America—the great dam on the Rapel River, on which Chile has spent $50,000,000. Electrical generating stations are springing up all over the country.

Furnaces have recently started working in a Pacific Coast steel plant. New capacity amounting to 300,000 tons of steel yearly has been made available by an investment of $14,000,000 in Chilean reserves and $60,000,000 in foreign credits. Plants have gone up for construction of Portland cement and copper wire.

The National Electric Company is taking an active part in aiding industries, towns, and farm co-operatives by distributing motors, machines, and irrigation pumps on long-term, low-interest credits

BOLIVIA

When President Truman asked Congress for $45,000,000 to start the Bold New Program on its way, he promised that "In every case, whether the operation is conducted through the United Nations, the other international agencies, or directly by the United States, the country receiving the benefit of the aid will be required to bear a substantial portion of the expense"

This principle of conditional aid, already familiar through the technical activities *in Latin America* of the Department of Agriculture, the Institute of Inter-American Affairs, and other agencies, is well illustrated by Bolivia's government-owned Development Corporation. Of its six board members, three are appointed by the United States Export Import Bank, which exercises technical supervision over all BDC projects and has to approve them before a loan is granted or work starts In addi-

the winter, when they are not needed, instead of in the summer, when they are.

Broken into seven regional programs, Chile's eighteen year plan calls for exploiting more than 6,000,000 kilowatts of electric power—as much as the present generating capacity of all France.

Already electricity is flowing from one of the most tremendous installations in South America—the great dam on the Rapel River, on which Chile has spent $50,000,000. Electrical generating stations are springing up all over the country.

Furnaces have recently started working in a Pacific Coast steel plant New capacity amounting to 300,000 tons of steel yearly has been made available by an investment of $14,000,000 in Chilean reserves and $60,000,000 in foreign credits Plants have gone up for construction of Portland cement and copper wire.

The National Electric Company is taking an active paft in aiding industries, towns, and farm co-operatives by distributing motors, machines, and irrigation pumps on long-term, low-interest credits.

BOLIVIA

When President Truman asked Congress for $45,000,000 to start the Bold New Program on its way, he promised that "In every case, whether the operation is conducted through the United Nations, the other international agencies, or directly by the United States, the country receiving the benefit of the aid will be required to bear a substantial portion of the expense."

This principle of conditional aid, already familiar through the technical activities in Latin America of the Department of Agriculture, the Institute of Inter-American Affairs, and other agencies, is well illustrated by Bolivia's government-owned Development Corporation. Of its six board members, three are appointed by the United States Export Import Bank, which exercises technical supervision over all BDC projects and has to approve them before a loan is granted or ...

walls to protect them, carrying through a series of six-year plans. Every day new plants are going up—fertilizer plants, coke plants, hydroelectric plants, sugar mills, packing and refrigerating plants. Highways and railways are being built, harbors improved, pipe lines laid down.

Much of the money for these developments has come from either the Export Import Bank or the International Bank for Reconstruction and Development. Since the task is barely begun, more capital will be needed. A large part of it henceforth must come from private sources in the United States. It appears that Mexico has reached a level of political stability making possible guarantees against further expropriations like that of American oil firms' holdings in the 1920's. At least that is to be hoped, for with only a sixteenth even of her water power resources in use, Mexico has a long way to go to achieve a modern and healthy economy.

CHILE

Chileans claim that their country has the greatest per capita potential of hydroelectric power in the world—1,300 watts per person as opposed to a little over 200 (water power only) for the United States. With a treasure like that waiting to be scooped up, the country which stretches like a twisted snake down the lower west coast of the continent has acted with vigor. As early as 1943 the Chilean Development Corporation launched a $100,000,000 eighteen-year program which was intended not only to electrify all railroads, factories, mines, and smelters, but to bring electricity to the remotest farm in the country.

Chile's principal coal mines, near the port of Concepción, are already depleted. They have been sunk to a depth of 1,300 feet and punched three miles out under the sea on a five mile front. Electricity can ease the drain on these shrinking resources. And electricity will draw up subsurface water in the great, rainless Atacama desert, giving its fertile soil the productivity of a second Imperial Valley. The dams built for hydroelectric power can also store the central valley rains, which fall contrarily in

the winter, when they are not needed, instead of in the summer, when they are.

Broken into seven regional programs, Chile's eighteen year plan calls for exploiting more than 6,000,000 kilowatts of electric power—as much as the present generating capacity of all France.

Already electricity is flowing from one of the most tremendous installations in South America—the great dam on the Rapel River, on which Chile has spent $50,000,000. Electrical generating stations are springing up all over the country.

Furnaces have recently started working in a Pacific Coast steel plant. New capacity amounting to 300,000 tons of steel yearly has been made available by an investment of $14,000,000 in Chilean reserves and $60,000,000 in foreign credits. Plants have gone up for construction of Portland cement and copper wire.

The National Electric Company is taking an active part in aiding industries, towns, and farm co-operatives by distributing motors, machines, and irrigation pumps on long-term, low-interest credits

BOLIVIA

When President Truman asked Congress for $45,000,000 to start the Bold New Program on its way, he promised that "In every case, whether the operation is conducted through the United Nations, the other international agencies, or directly by the United States, the country receiving the benefit of the aid will be required to bear a substantial portion of the expense."

This principle of conditional aid, already familiar through the technical activities in Latin America of the Department of Agriculture, the Institute of Inter-American Affairs, and other agencies, is well illustrated by Bolivia's government-owned Development Corporation. Of its six board members, three are appointed by the United States Export-Import Bank, which exercises technical supervision over all BDC projects and has to approve them before a loan is granted or work starts. In addi-

walls to protect them, carrying through a series of six-year pla Every day new plants are going up—fertilizer plants, coke plants, hydroelectric plants, sugar mills, packing and refrigerating plants Highways and railways are being built, harbors improved, pipe lines laid down

Much of the money for these developments has come from either the Export-Import Bank or the International Bank for Reconstruction and Development Since the task is barely begun, more capital will be needed A large part of it henceforth must come from private sources in the United States It appears that Mexico has reached a level of political stability making possible guarantees against further expropriations like that of American oil firms holdings in the 1920 s At least that is to be hoped, for with only a sixteenth even of her water power resources in use, Mexico has a long way to go to achieve a modern and healthy economy

CHILE

Chileans claim that their country has the greatest per capita potential of hydroelectric power in the world—1 300 watts per person, as opposed to a little over 200 (water power only) for the United States With a treasure like that waiting to be scooped up, the country which stretches like a twisted snake down the lower west coast of the continent has acted with vigor As early as 1943 the Chilean Development Corporation launched a $100,000,000, eighteen-year program which was intended not only to electrify all railroads, factories, mines, and smelters, bu to bring electricity to the remotest farm in the country

Chile's principal coal mines, near the port of Concepció are already depleted They have been sunk to a depth of 1,3 feet and punched three miles out under the sea on a five-m front Electricity can ease the drain on these shrinking resourc And electricity will draw up subsurface water in the great, ra less Atacama desert, giving its fertile soil the productivity c second Imperial Valley The dams built for hydroelectric po can also store the central valley rains, which fall contrarily

gressing upon spheres of activity which are within the scope of private initiative. This goal is to be pursued by undertaking works which, because of their magnitude or a lack of immediate profit, fail to attract the ordinary investor, private industries and undertakings are to be encouraged in every possible way." As in the case of Brazil's San Francisco River development, some federal revenue (about $200,000 a month, which for Peru is a lot of money) has been assigned to the corporation. Projects completed or now being carried out include the establishment of iron and steel industries with a yearly output of 55,000 tons; exploitation of Peru's generous coal reserves, development of port installations in Chimbote Bay, irrigation; and hydroelectric power.

Where the Santa River crosses a semi-desert on its way to the sea, 250,000 acres are being irrigated. To furnish electricity for their projected industries the Peruvians have diverted the course of the Santa River and exploited the waterflow of the Cañon del Pato, using underground galleries excavated through 6 miles of solid granite. The Santa hydroelectric project calls for an ultimate production of 125,000 kilowatts, of which 50,000 are already at work.

Other still more ambitious hydroelectric schemes have been surveyed by the Peruvian government: one for the Urubamba River, which will have 120,000 kilowatts capacity, one on the Mantaro, with 740,000 kilowatts, and one on the upper Marañón, with the staggering total of 2,000,000 kilowatts. The latter project may some day transform the economic structure of all northern and northeastern Peru.

PUERTO RICO

Though Puerto Rico is an island dependency of the United States, she is pre-eminently Latin American, and during the past ten years she has undergone a metamorphosis which holds out hope for every underdeveloped area of the world.

The United States has 50 inhabitants per square mile, Puerto Rico has 400. Poverty-stricken, undernourished, sickly, the

tion, even after committing itself to a developmental loan, the Bank may withhold payment until a substantial sum has been invested by the Bolivians themselves.

Mexicans and Chileans are busily inventing new stratagems to speed the conversion of their countries into industrial states. Bolivia, by contrast, has no industry worth mentioning. A shrinking supply of tin and unplumbed deposits of petroleum constitute her principal immediate resources. Her present needs are less for factories than for improved agricultural production —and above all, since she has no access to the sea, for improved communications with the outside world

When Alfalfa Bill Murray and Tex Rickard imported Oklahoma farmers to pioneer the rich grazing and farming lands of Santa Cruz in 1923, their mission failed because the imported Oklahoma farmers could not get their goods to market.

A U. S mission in 1942 proposed that Bolivia spend eventually $40,000,000 on highways, as against only $15,000,000 on agriculture and $8,000,000 on irrigation The United States Public Road Administration agreed to supply engineering aid. A key highway from Cochabamba to Santa Cruz, bisecting the heart of the country, is now nearing completion By agreement with Argentina and Brazil, railroad lines will soon operate from Santa Cruz to Corumbá, Brazil, on the one hand, and to Yacuiba, Argentina, on the other, providing Bolivia at last with direct railroad access to the sea The new roads will open one of the richest hinterlands in the world

PERU

The Santa River, running parallel with the west coast of Peru, is tiny on maps but tremendous in its power for good. The basin is now being developed along TVA lines by the Peruvian Santa Corporation, which has sway over an area of 40,000 square kilometers, including a littoral with bays and islands. "Its immediate goal," says the United Nations Department of Economic Affairs, "is the promotion of industrial development of the Santa River region, without in any way trans-

Puerto Ricans have long been literal skeletons in the U. S closet. Wrote Governor Theodore Roosevelt, Jr., in 1929: "The inland districts, from the ouskirts of the cane-ridden valleys to the tops of the mountains, seethe with human misery, and it is impossible to pass into or out of any city or town without traversing the fringes of unsightly, malodorous, filthy habitations which surround the more prosperous areas."

Yet Puerto Rico has a beautiful climate, great agricultural resources—particularly in sugar—and a beneficent United States suzerainty. Indeed, little squalid Puerto Rico in 1936 was the sixth best customer of the United States outside our own continental borders, while Americans in turn eagerly bought Puerto Rican sugar, rum, tobacco, and citrus fruits. Wages of sugar workers, however, averaged less than $150 a year—and sugar workers were the aristocrats of Puerto Rican labor. Despite a basic law providing that no corporation or individual might own more than 500 acres of Puerto Rican land, absentee landlords frequently possessed sugar estates of 50,000 acres Puerto Ricans claimed that since the American-owned sugar industry in fifteen years had received $100,000,000 in dividends on an investment of $40,000,000, it was clear that the industry was draining rather than bettering the Puerto Rican economy.

When the United States Supreme Court recently upheld the 500-acre limitation, Puerto Rico began the process of breaking up great sugar estates. By 1948 70,000 acres had gone back to the government, and thence to small landholders or to co-operatively operated farms Between 1936 and 1945 the production of electricity almost trebled in Puerto Rico Tax revenue in 1949 was 260 per cent higher than in 1940. Puerto Rico's Industrial Development Corporation set about getting private funds for investment where it could, but it used public funds when private funds were not available. It built a glass factory to make bottles for Puerto Rican rum, took over a cement mill, set up plants to make paperboard from the leavings of the sugar industry. It is making factory buildings at its own expense and leasing them to private investors with options to purchase. Taxes are remitted for new industries

Virtually every Latin American republic or possession has its own *Corporación de Fomento*—a development corporation owned in whole or in part by the government and usually aimed specifically at the development of natural resources. By such means Colombia is creating new chemical, metallurgical, and electric industries; Uruguay is tapping the Río Negro for electric power; Venezuela, concentrating on its most urgent problems, is seeking to variegate industries and increase agricultural and livestock production.

But to produce lasting benefits, a development program must begin at the beginning There can be no healthy country without healthy human beings, fed body and mind; there can be no healthy population without a healthy land.

Point 4 will provide technical aid to Latin America on her engineering projects. Simultaneously it will work on the beginning things.

Brazil, for instance, has an infant mortality rate that is five times our own. In all Mexico there were in 1949 only ten well-trained public nurses, while 62 per cent of its homes lacked either sanitary sewerage systems or a potable water supply. Most of the towns in Bolivia have no running water. Ten per cent of the French Guianans suffer from leprosy, as do thousands in Ecuador. Smallpox infests the tropics Venereal disease is so prevalent in Latin American ports that sailors are three times as likely to catch it there as elsewhere in the world In some parts of Ecuador the incidence of malaria runs as high as 75 per cent. The Amazon cannot be settled until jungle yellow fever is whipped; the fever, moreover, is creeping northward up the route of the Inter-American highway Smallpox cannot be wiped out until we have found a heat-resistant vaccine which can be transported in the tropics without refrigeration.

Improved physical health in Latin America is one pre-condition of improved economic health. The United States has the same selfish interest in furthering this pre-condition as a college boy has in keeping his roommate from coming down with a contagious disease. With a healthy Latin American economy, it will be easier to bring about a healthier world economy.

years they had developed two specifics which are wiping out the disease.

Similar Point 4-type projects are going ahead in irrigation and land reclamation, industrial techniques, mining and metallurgy, labor productivity, transportation, and education. Their tempo will quicken and their scope will increase. By the end of 1950 dozens of operations will be under way in public health training. Rural Latin Americans will be learning how to construct such undramatic and essential objects as sanitary privies. They will learn new treatments which render leprosy non-infective. Demonstration clinics in Latin American ports will ferret out the roots of venereal disease, develop programs for combating it.[10] DDT will hover about the walls of city and rural homes alike, destroying the mosquitoes that carry malaria. Technicians are counterattacking jungle fever, experimenting with new smallpox vaccines.

Point 4 may not itself finance great factories, but it will establish pilot plants for production of vitamins from Venezuelan fish, and laboratories to improve the market value of Paraguayan wood. It may not finance great dams, but it will give Colombia the technical assistance she needs to dredge the mouth of the Magdalena River, where now seagoing vessels may be delayed for weeks before they can proceed inland to discharge or take on cargo. Point 4 may not finance steel mills, but already the concept behind it has been responsible for finding high-grade manganese deposits near Corumbá and Amapá, Brazil. U. S. experts are assaying Brazilian oil shale beds. They are examining soil formations in Panama which appear identical with the oil rich sands of Venezuela. In Mexico they are finding new deposits of copper, lead, phosphates, alunite, ceramic clays. In Venezuela they are investigating deposits of coal, iron, nickel, asbestos, and other metals, many of them essential to the American stock-piling program.

Latin Americans and Latin American governments are not likely to agree that more elaborate development projects must be

[10] More than 25 per cent of the cases of venereal disease recorded in Sweden originate among sailors. In Rotterdam the figure is 47.6 per cent. A high proportion of these cases originates in Latin America.

years they had developed two specifics which are wiping out the disease.

Similar Point 4-type projects are going ahead in irrigation and land reclamation, industrial techniques, mining and metallurgy, labor productivity, transportation, and education. Their tempo will quicken and their scope will increase. By the end of 1950 dozens of operations will be under way in public health training. Rural Latin Americans will be learning how to construct such undramatic and essential objects as sanitary privies. They will learn new treatments which render leprosy non infective. Demonstration clinics in Latin American ports will ferret out the roots of venereal disease, develop programs for combatting it.[10] DDT will hover about the walls of city and rural homes alike, destroying the mosquitoes that carry malaria. Technicians are counterattacking jungle fever, experimenting with new smallpox vaccines.

Point 4 may not itself finance great factories, but it will establish pilot plants for production of vitamins from Venezuelan fish, and laboratories to improve the market value of Paraguayan wood. It may not finance great dams, but it will give Colombia the technical assistance she needs to dredge the mouth of the Magdalena River, where now seagoing vessels may be delayed for weeks before they can proceed inland to discharge or take on cargo. Point 4 may not finance steel mills, but already the concept behind it has been responsible for finding high-grade manganese deposits near Corumba and Amapá, Brazil. U. S. experts are assaying Brazilian oil shale beds. They are examining soil formations in Panama which appear identical with the oil-rich sands of Venezuela. In Mexico they are finding new deposits of copper, lead, phosphates, alunite, ceramic clays. In Venezuela they are investigating deposits of coal, iron, nickel, asbestos, and other metals, many of them essential to the American stock-piling program.

Latin Americans and Latin American governments are not likely to agree that more elaborate development projects must be

[10] More than 25 per cent of the cases of venereal disease recorded in Sweden originate among sailors. In Rotterdam the figure is 43.6 per cent. A high proportion of these cases originates in Latin America.

Most important of all—difficult, indeed, to overemphasize—is the simple fact that work is actually going on. Roads are hrusting into the wilderness, power lines are creeping across leserts, factories are uttering smoke, farmers are feeding im-roved feed to improved cattle. Latin American development s proceeding at a quickening pace while economic crises come and go, while governments are elected or thrown out of office, while statesmen negotiate and politicians dicker.

Latin America has rubbed Aladdin's lamp. By 1955 Mexico, Chile, Brazil, and Argentina alone will have 5,000,000 kilowatts more of installed power than they had ten years before. They will have added the equivalent of a full time slave for every man, woman, child, and babe-in-arms of all four countries. There will be more food in Latin American bellies, better clothes for Latin American backs, more pesos jingling in Latin American pockets While we wince at the growing pains to the south of us, the growth will continue. We cannot stop it if we would.

We can, in some measure, give the benefit of our experience. We can help to guide our neighbors toward democracy rather than statism, toward freedom rather than slavery, toward friendship rather than distrust Our money and skills can provide them with the start they need

But however useful we may be in the future of Latin America, we are not indispensable And that is quite as it should be.

7

Africa — Not So Dark

IN THE bush and forest lands of Africa there dwells a dragon which slays its thousands in the heat of the day, striking down man and man's beasts with fine impartiality. It has rendered tracts the size of an average European state uninhabitable. The monster is a brown, mottled fly a little larger than a bluebottle —a fly which horribly lays no eggs, but brings forth at intervals a fully developed, wriggling larva. The tsetse fly lives by sucking blood, and where an infected fly has sucked, there death

held in abeyance pending improvements in health, agriculture, and learning. But they are delighted to get whatever technical help may be available while still trying for economic aid. Most of their development corporations work closely with American technical missions.

Like other areas which seek rapid industrialization, Latin American countries tend to adopt methods which in the short range impede multilateral trade in favor of immediate national interests. As factories go up workers earn more money, and have to be stopped from spending it on foreign luxuries instead of turning it into domestic investments. Barriers are erected against goods from abroad which compete with new local manufactures.

It is this hunger for economic independence which has led Brazil, Argentina, Chile, Peru, Mexico to set up their own steel mills, even when they will have to pay higher prices for the domestic product than they would for American or European steel.

These are complex matters, in which instinct often battles with reason and long-term with short-term interest. They will never be adjusted to the complete satisfaction of everyone concerned. Nations which are industrially further advanced will be annoyed, they will have to draw on their stores of patience as well as on their bargaining powers

In the end, however, protective devices taken by the newly industrializing states are unlikely either to bring their industrialization to a halt or to drive them permanently outside the economic comity of nations.

Americans must accept also that Latin American development programs generally are and will continue to be government-directed. Every country has its five-, ten-, or twenty-year plan. The programs are designed to further the general welfare, not to abet either statism or private enterprise, but "it is regarded as a responsibility of government to create a general framework or 'economic climate' designed to assist and foster economic development."[11]

[11] *Economic Development in Selected Countries*, XV (United Nations, Lake Success, 1947).

The population of Northern Rhodesia in 1938, according to his study, consisted of about 14,000 foreigners and 1,400,000 natives. The 14,000 foreigners earned $14,320,000—about $1,000 apiece. The 1,400,000 natives earned $12,000,000—$8.50 apiece, of which 35 to 40 per cent consisted of the self-subsistence output of the jungle farmers. It must be added, of course, that the Europeans lacked the advantage of such nourishing dishes as caterpillars, which form a useful part of the Africans' diet

Forty per cent of the 500,000,000 horsepower of electric energy available in the streams of the world flows in Africa—and only a hundredth of that African potential has been developed Of the major minerals needed for industrialization, East Africa lacks only oil, which lies conveniently at hand across the Red Sea. Strategic uranium in fabulous quantities is waiting at Ulugulu, site of a pitchblende lode which can produce 89 per cent uranium oxide

The *New York Times* has described Africa, with the Middle East, as "the present-day magnets for American capital seeking investment outside the United States"

One reason for this interest is simply that despite increasing Communist agitation in the dark continent, it remains a comparatively reliable investment area in a notoriously unreliable world Its British, French, and Belgian overlords are not likely to expropriate foreign-owned industries. Profits can be taken out—in dollars The lure is as great for private capital seeking to flee the socialized countries of Europe as it is for businessmen in the United States

In 1947, 3,721 new companies with a total capitalization of nearly $400,000,000 were formed in the Union of South Africa alone Much of the money came from Western Europe, including the United Kingdom. In 1948 the Union drew $100,000,000 in American investments.

American as well as European business can use new markets American as well as European investors can use safe and profitable outlets for their money. Two hundred million Africans

blossoms. The fly transmits the parasite of trypanosomiasis, which brings death to livestock and the slow disintegration of sleeping sickness to humans.

In modern times, the African continent itself has seemed to be a victim of sleeping sickness. The disease is characterized says the *Encyclopedia Britannica*, by "protracted lethargy, fever and wasting." While the rest of the world has stumbled or run toward whatever destiny awaits it, Black Africa has slumbered uneasily and restlessly in the sun.

But today Black Africa is sitting up, rubbing its eyes, looking curiously and sometimes resentfully around it at the modern world.

Symbolic of the change is the recent advance of science against the tsetse fly. Imperial Chemicals Industries, Ltd, the same British concern which perfected paludrine as a specific for malaria, has developed a white, water-soluble powder which in 1949 alone immunized 2,000,000 head of cows, camels, and horses against trypanosomiasis The effectiveness of antrycide on humans is not yet proved, but it is known that it can open to livestock an East African area so great that all the beef needed for Britain can ultimately graze there.

Africa is a third desert, a third jungle, the balance largely high plateaus. It is the second largest continent, occupying a fifth of the earth's land area It has, to be sure, only 7.5 per cent of the earth's population—but an overpopulated world needs living space. It produces only 3 per cent of the world's farm products—but its agricultural potential remains virtually untapped. It has only 5 per cent of the world's railroads and 5 per cent of the world's trade, but the lack is a measure of the opportunity.

Since the region is almost entirely undeveloped, it is virtually impossible to obtain accurate figures on its income. In Northern Rhodesia, however, a careful pilot study gives results which may be fairly projected to most of Colonial Africa.[1]

[1] Phyllis Deane, "Measuring National Income in Colonial Territories," *Studies in Income and Wealth*, Vol 8 (New York, National Bureau of Economic Research, 1946).

en there was to be a village containing its own store, school, nd clinic.

In completed form the groundnut project was intended to louble Tanganyika exports, with a consequent increase in imports of things to wear and eat and work and play with. It would thus result in a better life for the Africans while supplying the British with urgently needed food.

But since its inception in 1946 an alarming gap has developed between theory and practice, and the gap is widening. The peanuts were of no use unless they could be transported—and that meant a railway and a port, which are not yet completed. As Evelyn John St Loe Strachey, Britain's Minister of Food, sadly conceded to H. V. Kaltenborn in the summer of 1949: "Everything is far more expensive than we had supposed. The African climate is hostile. The African soil is unresponsive. The African labor is untrained . . . "The agricultural machines we first brought in were not suitable to the conditions we faced. . . . Some sites we selected had to be abandoned for lack of water. We realize now that the scheme is unlikely to help Britain solve her food problem East Africa will consume a large part of the food we can produce. If we ever do get an export surplus, it can find markets much nearer than the British Isles."

And while the British were investing tens of millions of pounds in new peanut production in Tanganyika, 300,000 tons of peanuts were piled in pyramids at Kano, Nigeria—many of them rotting because the Nigerian railroad could not transport them fast enough to market!

So far, the Tanganyika peanut scheme can only be classified as a failure Something may yet be salvaged, but the time will be long and the expense tremendous for the results achieved.

The moral is once more that backward areas should not be asked to run before they have learned to walk, that massive schemes should not be approved and implemented at staggering expense before they have been tested Under Point 4, before the Tanganyika scheme received approval, experts would have checked the moisture and fertility of the soil, the access to markets, the availability of machinery and trained personnel—all

with money—and with pockets to put their money in—would be a pleasant sight for us to look upon

If American or any other investors should enter Africa with the thought of finding here old-time, carefree colonial exploitation, they would return home healthily disillusioned

It may be questioned, however whether even imperialistic exploitation could be more damaging to the future of Africa than the expenditure of hundreds of millions of dollars on well meant but ill-considered projects by European governments *One such project which appears largely to have belied its early* promise is the great Tanganyika groundnut (peanut to Americans) scheme of the British, under which land is being cleared for the biggest socialized farming experiment of the western world

In the early days of the groundnut plan it was described by the *Times* of London as the boldest and most comprehensive ever launched for developing backward territories"

The theory was beautiful The world is producing each year some 6,000 000 fewer tons of oils and fats than it can use Britain alone needs another 1 000 000 tons a year Under Operation Groundnut this deficit was to be lessened by 600,000 tons By 1956 Britain s Overseas Food Corporation was to have cleared 5,000 square miles of virgin brush in Tanganyika, Kenya, and Northern Rhodesia, 3,250 000 acres were to be planted to peanuts sunflowers, and grasses

Mechanical arts would be taught to the more ambitious natives They would become tractor drivers operators of machines Eight thousand tractors, plus thousands of trucks earth movers and bulldozers—many of them American leftovers from the war in the South Pacific—would be involved in peanut growing

It was planned eventually to break down the operation into 107 fully mechanized farms of 30 000 acres each A farm would require comparatively few laborers - perhaps 70 skilled Africans and another 230 day laborers For each force of 300

20's, Liberia granted large plantation concessions to the Firestone Rubber Company. The plantations may have represented a vanishing pattern of economic colonialism; but they brought sanitation, schools, hospital services, low-cost foods, and opportunities for advancement to thousands of natives—plus a wage of 20-odd cents a day, far more than non-Firestone natives had ever earned.

During World War II the Americans built Roberts Field 60 miles from Monrovia, the capital of Liberia, and began turning Monrovia itself into a commercial seaport. An economic mission from Washington studied the resources of the republic and made recommendations for diversified development.

"Members of the missions reported with some surprise," comments one authority,[2] "on the downright avidity with which the aborigines took to new ideas, new methods, new items in their diets, and the small new sources of income that enabled them for the first time in years to meet the tax collectors with ready money. In a test-and-demonstration area of some twenty villages, the people—generally regarded as stubbornly conservative—adopted new farming methods with enthusiasm—as well as the few donkeys that the Americans imported to replace Liberia's traditional transport system of headloading by human carriers."

Liberia is a land of mighty forests—the largest left in West Africa, of abundant gold, of cacao, of sugar cane, of wild palm oils and fibers. The hinterlands contain unexplored deposits of iron, lead, copper, corundum, chromite, bauxite, manganese. Not until the enthusiastic report of the economic mission, however, did American capital (apart from Firestone) prick up its ears. Almost immediately an operator of a barge line in New York harbor, Lansdell Christie, obtained the rights to mine ore at fabulous Bomi Hill, 40 miles from Monrovia. He slashed a highway from the capital to his concession, set up a village, is now busily establishing a railroad and a hydroelectric plant.

With Monrovia's $22,000,000 harbor installation now ready to accommodate ocean freighters, with more and more American firms exploring investment possibilities, Liberia is ready for a

the thousand and one factors on which the feasibility of such an undertaking depends.

An interesting parallel—and contrast—to the public-enterprise development of Tanganyika peanuts is the private-enterprise development launched in the Republic of Liberia by Edward R Stettinius, Jr In late 1947 Mr Stettinius' Liberia Company announced its intention of pioneering development of the country's natural resources along new and novel lines The government was to receive 25 per cent of the company's capital stock, the income from it to go for basic improvements such as the building of roads Another 10 per cent of the stock was set aside to provide a fund for the education of Liberians

In return, the Stettinius interests received a virtual monopoly on many resources of Liberia Subsidiaries were established to operate air lines, cacao plantations refrigeration plants, trading companies

But the company was spreading itself dangerously thin Deprived of the magnetic leadership of Mr Stettinius by his death in 1949, it appears that the Liberia Company is due for a considerable scaling-down of its early program

In the Stettinius scheme, as in the Tanganyika peanut farm, projects that loomed large on paper have shrunk in practice In all likelihood major mistakes have been made But Liberia Company mistakes were made at the expense of the entrepreneurs, not of taxpayers and where schemes have gone sour they have been dropped There have been no reasons of political prestige for bulling a project through to completion if it proved impractical

LIBERIA

In 1822 a shipload of one time slaves from the United States established on the west coast of Africa the settlement which eventually became Liberia only Negro dominated republic in Africa For a hundred years the westernized Liberians clung precariously to the coastline, battling interior tribes Soon afte they had finally extended their control to the hinterland in th

the thousand and one factors on which the feasibility of such an undertaking depends.

An interesting parallel—and contrast—to the public-enterprise development of Tanganyika peanuts is the private enterprise development launched in the Republic of Liberia by Edward R. Stettinius, Jr. In late 1947 Mr. Stettinius' Liberia Company announced its intention of pioneering development of the country's natural resources along new and novel lines. The government was to receive 25 per cent of the company's capital stock, the income from it to go for basic improvements such as the building of roads. Another 10 per cent of the stock was set aside to provide a fund for the education of Liberians.

In return, the Stettinius interests received a virtual monopoly on many resources of Liberia Subsidiaries were established to operate air lines, cacao plantations, refrigeration plants, trading companies.

But the company was spreading itself dangerously thin. Deprived of the magnetic leadership of Mr. Stettinius by his death in 1949, it appears that the Liberia Company is due for a considerable scaling-down of its early program.

In the Stettinius scheme, as in the Tanganyika peanut farm projects that loomed large on paper have shrunk in practice. In all likelihood major mistakes have been made. *But Liberia* Company mistakes were made at the expense of the entrepreneurs, not of taxpayers, and where schemes have gone sour they have been dropped. There have been no reasons of political prestige for bulling a project through to completion if it proved impractical.

LIBERIA

In 1822 a shipload of one-time slaves from the United States established on the west coast of Africa the settlement which eventually became Liberia, only Negro-dominated republic in Africa. For a hundred years the westernized Liberians clung precariously to the coastline, battling interior tribes. Soon after they had finally extended their control to the hinterland in the

ounterpart fund. The United States, which must be consulted before this fund is used, has approved the expenditure of large amounts on Africa.

Britain, France, Belgium and Portugal are the great landholders of Africa. Of the four, the Belgians and Portuguese are leaning most heavily on private capital for the modernization of their African colonies. Private capital is weaving a web of transportation, electrification, and light industries around three cities of the Belgian Congo—Léopoldville at the mouth of the Congo River, Elizabethville on the Rhodesian border to the southeast, and Stanleyville in the north. Mining of gold, tin, copper, coal, diamonds, zinc, molybdenum, and manganese—not to mention Congo uranium, on which American sources draw heavily for atomic weapons—is being modernized Ten million natives, most of whom now live in the bush, are to be drawn into the program, which will include projects in housing, education, and health. Lever Brothers is opening technical schools, starting sawmills and plywood factories, constructing and enlarging soap factories.

The Brussels government has set up a welfare fund of 2,350,000,000 Belgian francs (about $847,000,000) for the Belgian Congo and the trust territory of Ruanda-Urundi. But to carry out extensive industrial and agricultural development, aid will be needed from the United States. Pierre Wigny, the Brussels Minister of Colonies, believes that comparatively small sums can set the ball of modernization rolling The terms under which private American capital might become available for the Belgian colonies under Point 4 were discussed on a recent visit to Brussels by Winthrop Aldrich of the Chase National Bank.

One of the basic materials for beginning the process of industrialization is cement, which is the flesh of roads, dams, irrigation works, docks, industrial plants, airports, sewage networks. American firms in late 1949 supplied equipment for the largest cement plant expansion program in African history. New plants in Portuguese East and West Africa will treble present output. They are being financed by private Portuguese capital, with pay-

surge of economic progress. She expects a foreign trade incr. of 25 per cent within the next five years.

Britain's Food Minister Strachey recently remarked th "The European Recovery Program cannot succeed if it remain a program confined to Western Europe; for Western Europe, *itself and by itself, is not, and never can be made, an economic* ally viable area. . . . The Old World of Western Europe is today most grievously out of balance, but we must call in a still older world—the world of Africa—to redress that balance and *in doing so, we must find the way of transforming Africa.* An Africa based on the economics of the hoe will be a liability and a drain on Western Europe. An Africa based on the economics of the tractor can become the indispensable partner of the West."

The four great colonial powers in Africa—Britain, France, Belgium, and Portugal—are engaged today in an all-out drive for the modernization of the dark continent. In no small meas ure, the drive is dependent on American aid

ECA, for instance, has set aside $10,000,000 to explore Eas African mineral possibilities ECA experts are giving advice o maintenance and repair of transportation networks. In 191 ECA granted $550,000 to the Rhokana Corporation of Norther Rhodesia to set up a modern plant for extracting cobalt fro copper ores. Kenya Kyanite, Ltd , was granted a loan to increas production of cyanite. In both instances, the United States re ceived an option for the purchase of production for stock-piling

Under ECA, too, American technical experts are workin with the British in research on trypanosomiasis, malaria, an other insect-borne diseases. These technical programs will continued and increased under Point 4.

Vital to the development of Colonial Africa has been the E counterpart fund, which directly or indirectly has financed man of the major schemes. If Pierre Duclos of Lyons, for instance, wants to buy an American *harvesting machine,* he pays his own government for it in francs. The government then pays the American seller in dollars which have been made available by ECA. But the francs paid by Pierre Duclos are set aside in

id the old men, a great river had flowed richly across the country, bringing with it food and wealth Then, overnight, th river dried up, as if it had been sucked away Crops vanishe Ever since, the people had been hungry and poor

The engineers smiled They knew the legend to be based c truth. Here, long ago, had flowed a branch of the Niger Rive Soon after the white men departed, a spate of water 600 fe wide came gushing down the old river bed, while the nativ stood on the banks and marveled

The revived flow was an early work of the Niger Vall_, Authority, launched in French West Africa to exploit the potential of one of the world s great rivers Rising 150 miles inland, the Niger describes a great semicircle, bearing first to the north and then turning southward, to cross into British Nigeria Along its banks lies the gathered fertility of centuries, prime for the growing of any tropical plant

The aim of the NVA, said Maurice Claude Rossin, chief of social and economic engineering in the Niger River office of the French government,

> is social because designed to regroup a sparse population, to afford them better conditions of life by putting into their hands the means of assuring maximum results from their labor to provide for their education, as it were from the ground up and to encourage their advancement, materially and in things of the spirit
>
> The aim is economic because a country which lived on itself (and lived badly), and which exported nothing is being transformed into a productive region that will exchange products with the rest of West Africa—and the world [3]

Few development schemes can have faced greater obstacles. On other continents technicians may complain that it is difficult to graduate farmers from the use of draft animals to that of machines but in Nigeria the difficulty was to graduate the natives from the use of their own back muscles to that of domesticated beasts

The Nigerian ox is not accustomed to the indignity of labor

[3] Survey Graph (January 1945)

s for daily meals, storerooms are full of cereals for the fields
At harvest time each native family first puts aside the amount of cereals
y will need in the year ahead and the amount of seed necessary for
are sowing The rest is sold by the co-operative for the benefit of its
embers After costs, the remainder represents a net return to each family
the basis of its contribution to the crop that has been sold
Glance at the map of this territory and you will see how readily the
ree principal colonies which border the valley—Senegal French
Guinea, and the Ivory Coast—can be reached They produce valuable
articles for cash export—peanuts palm oil cocoa coffee But they need
food The strategic goal of the Niger River Valley development is to
satisfy just that

Eventually the NVA will provide not only irrigation but electricity for light industry and refrigeration Properly used, the wild Niger can raise the living standards of French Nigerians to the level where they can be safely left to continue the task themselves

BRITISH NIGERIA

Britain's program of African development is centered in two government agencies—the Overseas Food Corporation and the Colonial Development Corporation It is the Overseas Food Corporation, designed entirely to encourage food production, which has handled the disappointing Tanganyika peanut program OFC is planting another 50,000 acres to peanuts in Gambia The Colonial Development Corporation deals with all phases of economic progress in the colonial areas One of its most interesting projects also in Gambia, is a program to provide 20,000,000 eggs a year Ten thousand acres of forest are being cleared for the production of grain to feed the chickens, and cold storage facilities are going up to preserve both eggs and meat Cost of the project is estimated at $2,000,000

A ten year African development program which is scheduled for completion in 1956 calls for expenditures of $800,000,000 (in pounds sterling) of which the colonies will furnish $575,-000,000 and the British the remainder

In much of Africa milk and meat are the least precious prod-

He wanders at will in the jungle. To turn him into a draft mal is a slow, painstaking task. But it is not so slow, or so pa taking, as teaching the farmer himself that he can grow . crops if he exchanges his short-handled hoe for an ox and plow. When the teacher has turned his back, the new convert likely to return to the ancestral tool. He is not fully persuade until long example has proven the advantage of the new med ods.

A second obstacle to rapid accomplishments by the Niger Va ley Authority was World War II. France had little energy spare for colonial experimentation. Nonetheless, work was ca ried on throughout the entire war period. The first great e gineering achievement, the diversion dam at Sansanding, w completed in 1941. The Sansanding dam backs up water 15 miles through canals and once-dry river beds. The canals a navigable throughout the year.

By the time of the surrender of Germany, 50,000 acres (previously unproductive and uninhabitable jungle land i French Nigeria had been cleared, cleaned, irrigated, and mad the home of nearly 20,000 men and women imported fro nearby regions of identical climate.

Reports M. Rossin,[4]

> On their arrival they have found land free of underbrush and provide with a complete system of irrigation. They have found homes in villag constructed in advance. Each family starts housekeeping in a dwelling s aside for it; each receives a minimum of agricultural equipment (plow harrows, and carts) together with cattle required to pull the farm veh cles, seeds necessary for initial planting, and food adequate to sustain th family until the first harvest For every unit of 15,000 to 20,000 acres, th colonists are grouped in co-operative agricultural associations . . . po sessing tools of production and processing over and above the requir ments of the individual family—trucks, barges, rice mills, thresher tractors. . . .
>
> Where formerly there were only a few dwellings crowded togethe there are now real farms. Plows, harrows, carts can be seen, proudly di played, in a corner of the clean yard. There are bulls and cows, chicken and ducks. The fruit trees begin to bear; the family garden yields vege-

4 *Op cit.*

ucts of a cow. The most precious is manure for fertilizer. Before Africa can be fully developed, means must be found to fertilize millions of acres of rundown soil.

This problem is particularly urgent in British Nigeria, which with proper treatment may yet become the bread basket of the British Isles. It is not surprising under the circumstances that some Britishers complain about the upstream Niger Valley Authority of the French; it is depriving them, they say, of much of the usefulness of the Niger along the last 1,200 miles of its journey to the sea. To the extent that these complaints are justified, they illustrate the wastefulness of developing river valleys according to nationalistic rather than geographical requirements.

In British Nigeria 1,800 colonial officers rule, through tribal chiefs, more than 10,000 times as many Africans. So primitive are communications that over great areas administrative officers cannot be reached by telegram. Letters are sent by human carriers. Huge tracts are semi-arid; natives walk 10 miles a day for a bucket of water, which they carry home on their heads. Near Awka, fresh gullies 500 feet deep show the quick effects of erosion. Forest dwellers feed on shrubs and giant snails. In parts of the interior, ritual murder is still a native custom. Sleeping sickness, leprosy, malaria, yaws, and venereal diseases are commonplace; most of the people suffer from hookworm, filaria, roundworm or bilharzia (worms in the blood), literacy is below 5 per cent; there is only one hospital bed for every 5,000 persons, as compared with one for 250 in England, tsetse has made it impossible in vast areas to keep any domestic animals except dogs.

But in this land of sickness, ignorance, and abject poverty there are curious contradictory stirrings. Returning from a tour of the African colonies, Aldous Huxley reported the contrast: "Near Enegu, administrative capital of the eastern provinces of Nigeria, I drank palm wine with an old chief, surrounded by his fetiches and jujus, some of them caked with the blood of sacrificial fowls, saw the great village drum, the juju house with its collection of painted clay figures, and a dance by the young men. . . . I . . . could hardly believe that I was still in the twentieth century." But in the capital itself Huxley found thou-

also have every kind of cattle sickness, a great source of loss to the farmer. And we have just scratched away the skin surface of our land. The native tills it for a few years, exhausts its fertility, puts nothing back, and moves on. The result is that the deserts of Africa are gaining ground.

Through Point 4, added General Smuts, the United States can help start Africa toward these basic improvements.

More of Point 4 or its equivalent, and less of peanut plans, appears to be the immediate prescription for Africa. It will be time enough for great expenditures when the land and people have been prepared to take advantage of them.

Europeans are aware with a terrible prescience of the fatefulness of the steps that are now being taken It is to Africa, after all, that Europe must turn first for markets and raw materials when Marshall Plan funds are no longer available. Washington, by providing expert personnel and permitting use of the Marshall Plan counterpart fund for African development, has indicated its own awareness of the key role which Africa will play in the coming years.

Through Point 4, implemented not only by the United States but by every other free nation with capital and skills to spare, it will be possible to take first steps first without losing sight of the great ultimate goal of a prosperous and productive Africa. Our understanding and support will continue to be essential. Unless Western Europe can turn to Africa and the Middle East for replenishment, the billions we have spent on the Marshall Plan may turn out to have been wasted. If, on the other hand, the natives of Africa can be put to producing richly for themselves and the rest of the world; if they can receive pay for their production in amounts which will turn them into eager purchasers of European goods; if they can be raised in health and education to become the peers of the whites who are now their masters—then indeed our work will have been rewarded.

If only 25 per cent of the 200,000,000 black Africans can develop their natural resources with planned technical and industrial guidance, an awakened Africa will not only experience a novel prosperity but will carry all Europe in her wake. And in the wake of Europe comes the world.

immense acreage of irrigable land. The possibilities of thi scheme may be gauged when I say that the dam envisaged woul hold back the waters of the Zambezi in a lake having a coast line of 400 miles, and impound a quantity in excess of tha stored by the great Boulder Dam in the United States. . . . I understand that the hydrographic surveys will take several year to complete, so that I am unable to venture any forecast as to when this source of unlimited cheap power may become available."[5] In Southern Rhodesia, the Sabi Valley will be developed on broad TVA principles, with 100,000 acres coming under irrigation. There will also be exploration of the valley's mineral wealth.

Awesome in its potentialities is the proposal to create a superdam on the headwaters of the Nile—at Owen Falls, near Jinja, Uganda. The Uganda dam would eventually supply East Africa with 22,000,000,000 kilowatt-hours of cheap power—the equivalent of all the hydroelectricity used in the United States as recently as 1925.

There are strong arguments against erecting such gargantuan dams in the initial stage of an industrialization program; a few relatively small developments may be far more effective toward creating a balanced economy than a single tremendous mass of concrete. The immediate effects of centralized power production, thrown into a reservoir of cheap labor, may be disastrous.

But in any program as massive as the development of Africa, realities will modify blueprints Gradually the British, French, and Belgians are coming to realize that in a continent where native populations are frequently 100 per cent diseased, the road to a modern industrial society is a long and tortuous one.

Asked by Mr. Kaltenborn what he would do for Africa if he had $1,000,000,000 to spend, General Smuts, former Prime Minister of the Union of South Africa, mentioned no great dams. Instead he replied:

I'd use it to promote health—human health, animal health, and the health of the land Africa is full of disease from one end to the other We

5 Colonial Review (March, 1947)

8

The African Middle East — Gardens for the Sahara

PROCEEDING EASTWARD overland from the Straits of Gilbraltar, keeping the African jungles to your right, you will find yourself after 4,000 miles at the borders of India. Before arriving there you will have traversed a territory roughly twice the size of the United States—the homeland of approximately 200,000,000 of the world's 225,000,000 Mohammedans. Here, in the Near and Middle East,[1] civilization was born. Some students believe that here, too, civilization may receive its death blow.

In the Middle East the Babylonians, Assyrians, Egyptians, Medes, and Persians flourished Across the Middle East the Greeks, Romans, Mongols strode on their imperial conquests. In the Middle East the Ottoman Empire sprang to martial life.

In the Middle East today human beings in the millions are racked by malaria, blinded by trachoma, rotted by syphilis; they grovel like beaten dogs, breed like rats, kill over bones, are old at twenty-five. They are too often subjects of degenerate and corrupt rulers; they are generally illiterate; they are frequently stupid from sickness, undernourishment, and filth Where the ruins of vast public buildings may still be discerned on the sites of ancient cities, there now squat wretched villages. Where there were once dams and aqueducts, the goat herds of nomads pick at the scanty vegetation.

Yet this is the crossroads of empire, the heartland of the world.

It is strange for an American to reflect that the power, the prestige, and even the continued peace of his country may de-

1 The borders of the Middle East depend largely on the whim of the cartographer Here it is considered to include Europe's Arabian dependencies and the Arabian kingdom of Egypt in Africa, and that portion of Asia which lies west of India and south of the Soviet Union Greece, sometimes considered a Near Eastern state, is omitted. So, for obvious reasons, are the Mohammedan portions of the Soviet Union
In Africa, the areas so labeled are Spanish Morocco, 18 350 square miles, population 750,000. French Morocco, 172,104 square miles, population 8,990,428. Algeria, 847,552 square miles, population 7,234,684; Tunisia, 48,313 square miles, population 2,608,313, Libya, 679,358 square miles, population 88: miles, population 17,423,000

grave problems This area contains vast natural resources. It lies across the most convenient routes of land, air, and water communications It is consequently an area of great economic and strategic importance, the nations of which are not strong enough . . . to withstand powerful aggression It is easy to see, therefore, how the Near East and the Middle East might become an area of intense rivalry between outside powers, and how such rivalry might suddenly erupt into conflict.

The President proposed two preventives. First, he said, there must be no interference, by force or penetration, with Middle Eastern sovereignties Second, the countries must be aided to develop their resources and raise their standards of living.

At the time of this address, political analysts still assumed that most of Mr. Truman's policy declarations, frequently improvised and obviously phrased with an eye to their political effect, might safely be forgotten as soon as they were uttered. They have since learned better. Few men in American public life have hewn so closely, and sometimes so exasperatingly, to their statements of intent. If the political analysts in 1946 had paused a little more thoughtfully over the paragraphs just quoted, they would have been less surprised at the Truman Doctrine in 1947 and the Bold New Program in 1949. Just as Latin *America provided the experience which proved the feasibility* of extending technical and financial aid to underdeveloped areas, so the Middle East provided the political necessity which forced the program from the realm of dinner chatter to the test of practical action.

Other more pressing problems took precedence for the United States over the economic and social development of backward areas The administration had to deal with military aid for Greece and Turkey, with economic recovery for Western Europe, with the North Atlantic Pact. Only when this essential groundwork had been laid did it become possible to turn thoughtful attention to the key problem of our generation—the unredeemed misery of two-thirds of the people in a world which possessed all *the technical facilities for making human* welfare universal.

To be sure, the British under the Labor government had awn up a master plan for vitalizing the economy of the Middle st. But without know-how, capital, and encouragement from e United States, blueprints seemed likely to remain little more an blueprints.

Meanwhile, the Jewish homeland in Palestine had become, to e fury and dismay of the Arabs, a Jewish state. And just as he rape of Europa brought forth the majesty of Minos, Rhadamanthus, and Sarpedon, it appeared that the seed now planted n Palestine might yet result in new order, justice, and vitality or the followers of the Prophet If the outbreak of war between ew and Arab was a terrifying reminder that the Middle East oday is more than ever a danger spot, cessation of the conflict provided an uneasy breathing space by which the Middle East might profit to seek stability, prosperity, and permanent peace.

In Washington, the alternatives were bluntly phrased. Israel could be either a stimulus to the economic and social betterment of the Arab nations, or an irritant which ultimately the Arabs would seek again to excrete through the purge of war. And the next time the war was not likely to remain localized.

One purpose behind Point 4 of President Truman's 1949 inaugural address, therefore, was to hold out hope that if peace could be maintained the United States would provide technical and financial aid to both Jew and Arab.

The technical aid will come first. The immediate needs of the Middle East are for minimum standards of health, education, transportation, agriculture, light industry, and political administration

When a tiny experiment station operated by the Near East Foundation in Lebanon identified in 1948 the pest that had been ravaging the vital tomato crop in the Bekaa valley, the successful experiment not only saved thousands of dollars and tons of precious food—it also mapped the kind of road that Point 4 seeks to follow

When the World Health Organization stopped an Egyptian cholera epidemic in its tracks in 1947, it was mapping the same kind of road. The cholera epidemic while it lasted disorganized

the economic life of all lower Egypt. It threatened all Europe. Yet WHO whipped it in less than six weeks' time!

It was in Egypt, too, that the anopheles gambiae mosquito started in 1942 a malaria invasion even more dreadful than the one that had devastated 12,000 square miles of Brazil a few years before. In some parts of upper Egypt malaria struck down 90 per cent of the population. An average of more than seven-tenths of the people in Nile villages were infected. Within two years the death toll reached 135,000.

The Egyptian government in 1944 called on the Rockefeller Foundation for help. By 1945 the gambiae in Egypt were a thing of the past, wiped out by drainage and spray guns. Today there is no malaria in Egypt.

Without malaria, Egypt is more nearly ready for improved farm practices, industrialization, and a richer life than is, say, Iran, where 82 per cent of the farmers still suffer from malaria, where peasants live in shacks without windows, wear clothing consisting of old rags, and believe that raising chickens may call down a divine curse, or that planting vegetables may destroy fertility.

No less than health, education, and agricultural improvement, the Middle East needs new communications Lacking highways, railroads, and airplane lines, with but the most inefficient of waterways, trade stagnates—and so do nations.

Commented David L. Cohn in the *Atlantic Monthly*,[2]

> Without [transportation], there may be a surplus of food in one place and a famine in another; a hunger for goods on the one hand and surplus on the other Moreover, costs of transportation by coolie's back, cart, or camel are inordinately high, no matter how low the coolie's wages or the camel's upkeep. It is unnecessary to stress the point that we must develop transportation services in the East as a primary condition to the prosperity of the region
>
> Simultaneously, we must increase the farm output of these countries in order to banish the specter of starvation that always hangs over them One of the direst needs is water. It is at hand, but it must be impounded by dams during the rains and released during the dry season through irriga-

[2] July, 1946

where the king owns a fifth of all the fertile land and 17,000,000 of his 20,000,000 subjects own not a square foot, and where a fellah who is very lucky may earn $25 a year.

MOROCCO

Large-scale planning is no novelty to North Africa. Maurice E. H. Rotival, now in charge of planning for the French in Madagascar, recalls that "One of the greatest development plans ever done as a whole and financed by both government and private groups was the development of Morocco, which started during the First World War and arrived at full development around 1930. The speed with which that protectorate was developed, with very little mechanical means at our disposal at the time, appears to me today fantastic. In less than twenty years that country, which is as large as the state of Texas, was completely electrified with hydroelectric and steam plants, and railroads were electrified too The country was covered with roads, harbors were built of stone, and beautiful modern cities like Casablanca, Fez, and Marrakech were built according to plan, protecting very carefully the old Islam cities which were separated from the European parts of the cities by grants, pacts, or spans of land. . . ."

But the planning of the 1920's is inadequate by the standards of the 1950's. Between 1936 and 1947 the population of Morocco grew more than 40 per cent—from 6,300,000 to 8,900,000. To provide food for these new mouths, the French launched a ten-year plan aimed at adding 500,000 acres to the farmland by irrigation and another 315,000 acres by drainage. Farm mechanization—already extensive—is being expanded to raise the production of cereals to a point above the needs of the population. The French are also sextupling the supply of electricity (from 100,000,000 to 600,000,000 kilowatt-hours annually) and are using the power to bring light industries to Morocco. Private investment from France and abroad is pushing up Moroccan canneries, cement plants, flour mills, and sugar refineries. In Algeria it is developing phosphate, manganese,

where the king owns a fifth of all the fertile land and 17,000,000 of his 20,000,000 subjects own not a square foot, and where a fellah who is very lucky may earn $25 a year.

MOROCCO

Large-scale planning is no novelty to North Africa. Maurice E. H. Rotival, now in charge of planning for the French in Madagascar, recalls that "One of the greatest development plans ever done as a whole and financed by both government and private groups was the development of Morocco, which started during the First World War and arrived at full development around 1930. The speed with which that protectorate was developed, with very little mechanical means at our disposal at the time, appears to me today fantastic. In less than twenty years that country, which is as large as the state of Texas, was completely electrified with hydroelectric and steam plants, and railroads were electrified too. The country was covered with roads, harbors were built of stone, and beautiful modern cities like Casablanca, Fez, and Marrakech were built according to plan, protecting very carefully the old Islam cities which were separated from the European parts of the cities by grants, pacts, or spans of land. . . ."

But the planning of the 1920's is inadequate by the standards of the 1950's. Between 1936 and 1947 the population of Morocco grew more than 40 per cent—from 6,300,000 to 8,900,000. To provide food for these new mouths, the French launched a ten-year plan aimed at adding 500,000 acres to the farmland by irrigation and another 315,000 acres by drainage. Farm mechanization—already extensive—is being expanded to raise the production of cereals to a point above the needs of the population. The French are also sextupling the supply of electricity (from 100,000,000 to 600,000,000 kilowatt-hours annually) and are using the power to bring light industries to Morocco. Private investment from France and abroad is pushing up Moroccan canneries, cement plants, flour mills, and sugar refineries. In Algeria it is developing phosphate, manganese,

scheme in the world, surpassing any even in the United States or Russia.

A dam on each of the two rivers, said Mr. McNeil, will provide Uganda, Ethiopia, and Egypt with "very substantial" electric power, and the vast area of the Sudan will become "at least a great ranching country and, at the best, a country of well-balanced agriculture." The tremendous Owen Falls Dam across the Victoria Nile in Uganda[a] will control the level of Lake Victoria and produce enough electricity to power all the industries Africa can establish in a generation.

Egypt, Ethiopia, Uganda, Belgium, and the Sudan will share in costs of the project. Its completion is expected to take nearly a quarter of a century.

THE QATTARA DEPRESSION

Incalculable as the significance of the Nile River dams may be, for dramatic color they are excelled by two other schemes which have been blueprinted for northern Africa.

First of these is the proposal to inundate the Qattara depression, a great natural hollow, virtually uninhabited, which was discovered in modern times in the northern part of the Libyan desert, not far west of Cairo. The depression lies well below sea level. By admitting sea water from the Mediterranean, 35 miles away, the influx being balanced by evaporation from the surface of the salt lake which would thus be formed, it has been estimated that it will be possible to obtain a reliable net output of power ranging from 150,000 to 200,000 kilowatts—up to 1,000,000,000 kilowatt-hours a year—depending on the level of the lake and, consequently, the distance that the incoming water will have to drop.

The estimates assume a doubling of rainfall as the result of creating an artificial lake containing 19,500 square kilometers. Doubling the rainfall will mean also the growth of vegetation on the shores of Qattara Lake, settlements, and commerce and

[a] See Chapter VII.

of this vast body of water would lie 10,000 square miles of newly cultivable territory. Not only would the Braman Sea promote rainfall, thus providing its shore areas with water for crops, but it would create an avenue of commerce for the cities that he predicted would spring up there. The dikes in the hills would enable trees to be planted where no vegetation has grown for two thousand years.

The boldness of the Braman concept can be compared only with that of Ferdinand de Lesseps in opening up the Suez Canal. Commented the *London Morning Post:*

> A barren and uninhabitable region would be converted into a land flowing with milk and honey, sheep and oxen, and inhabited by a prosperous population . . .
>
> The prospect of supplying Europe with a new granary is certainly an attractive one; and it is not surprising to hear that such a scheme put forward by so serious and responsible an undertaker should be under the consideration of the French government. Algeria, Tunis, and Morocco would all be affected immediately, and apparently to their great economic benefit; but those who accepted responsibility for such an experiment would be bound to satisfy themselves that all the consequences had been measured. So audacious an interference with physiography might well raise misgivings in timid minds. Does not the Prophet Amos declare that "who calleth forth the waters of the sea, and poureth them out upon the face of the earth, the Lord is His name"? And it is impossible not to reflect that it might be easier to do this thing than to undo it. On the other hand, some of man's greatest triumphs have been in the direction of modifying his environment to his needs and of reclaiming waste spaces to his use.
>
> Nor is it in the tradition of the French any more than of the British or the American genius, to shrink from great engineering enterprises. But what would be the effect, not only on North Africa, but on Southern Europe? Neither the engineers, nor the physiographers, nor the economists can answer that question confidently

Many years will pass before the energies of man can be spared from more immediate problems to make the Sahara Desert bloom again. Long before, there must be the soap and the quinine, the improved seed and the preserved goods, the trained technicians and the sound governments. Only when vitality is no longer drained by malaria and the tsetse, when there is food

States stands ready to lend a firm and helping hand in such an endeavor.

But even assuming such co-operation, there is little agreement as to the most practical immediate steps toward improving Middle Eastern economy. Many of the countries have prepared ambitious nationwide programs such as the $650,000,000 overall development scheme in Iran and the great Jordan Valley Authority blueprint in Palestine. Aiding and abetting this massive thinking are American engineering firms which sometimes seem to visualize development purely in terms of dam installations and steel factories.

It is not surprising that many Middle Eastern nations should think of Point 4 as a device for financing and supervising pet national projects And it is not unlikely that they will be deeply disappointed to discover that Point 4 proposes no financing of such projects outside the banking institutions already in existence. Capital investment from private sources will not flow reliably until the underdeveloped areas have proved their readiness for it in terms of both ability and stability. Investments made in advance of such a demonstration will lose a great part of their theoretical effectiveness at the best, and at the worst they may actually set back common-sense development by many years.

IRAN

A striking example of a project which, in the wrong hands, could specialize in the grandiose at the expense of the grass roots may be found in Iran.

Overseas Consultants, Inc., of New York City, announced in the fall of 1949 a seven-year development program which aims at increasing the agricultural and industrial output of Iran more than 200 per cent. Participants in Overseas Consultants include some of the most famous engineering concerns in the United States. Their program is to be financed from internal Iranian loans and annual oil royalties of more than $50,000,000.

States stands ready to lend a firm and helping hand in such an endeavor.

But even assuming such co-operation, there is little agreement as to the most practical immediate steps toward improving Middle Eastern economy Many of the countries have prepared ambitious nationwide programs such as the $650,000,000 overall development scheme in Iran and the great Jordan Valley Authority blueprint in Palestine. Aiding and abetting this massive thinking are American engineering firms which sometimes seem to visualize development purely in terms of dam installations and steel factories.

It is not surprising that many Middle Eastern nations should think of Point 4 as a device for financing and supervising pet national projects. And it is not unlikely that they will be deeply disappointed to discover that Point 4 proposes no financing of such projects outside the banking institutions already in existence. Capital investment from private sources will not flow reliably until the underdeveloped areas have proved their readiness for it in terms of both ability and stability. Investments made in advance of such a demonstration will lose a great part of their theoretical effectiveness at the best; and at the worst they may actually set back common-sense development by many years.

IRAN

A striking example of a project which, in the wrong hands, could specialize in the grandiose at the expense of the grass roots may be found in Iran.

Overseas Consultants, Inc., of New York City, announced in the fall of 1949 a seven-year development program which aims at increasing the agricultural and industrial output of Iran more than 200 per cent. Participants in Overseas Consultants include some of the most famous engineering concerns in the United States. Their program is to be financed from internal Iranian loans and annual oil royalties of more than $50,000,000.

> Freedom of thought, of expression, and of action are also related to economic development. . . . How fear of authority still operates in Iran the Near East Foundation learned last year Its agents gave some cash loans and a few cows to some peasants in Varamin, a district twenty-five miles south of Teheran. The next day the peasants returned the money and the cows, saying they could not keep them. They feared to incur the displeasure of the village headman (kad khodā) and the cowman (gavabānd) who rented cows to them.

Ala'i concludes that "the most precious export commodity the U.S. has to offer is not its money wealth, but its revolutionary society in which individuals take their chances, express opposition to authority when and if they want to, and feel no dread of punishment if their experiments fail; can they not try again or do something else? The basic requirement of all growth is the opportunity for the citizen to try new ways of production, new methods of doing business, and new means of improving his lot in life."

He might have added another characteristic of private-enterprise as contrasted to public-enterprise developments: private enterprise measures a going operation not by its aims but by its results—and the sooner it produces results the better. Results mean profits. Often, therefore, business organizations accomplish in months or years what would take decades for government working alone.

Fortunately for the ultimate usefulness of the Iranian seven-year program, its American director, Max Thornburg, has long emphasized the folly of substituting great government expenditures for basic local improvements Under his leadership it may be hoped that the program will move first in such imperatives as men, land, water, and roads, letting derivatives—steel mills and locomotive factories—wait for a riper time Carried on in immediately modest terms, the Iranian development may become a working model for Point 4 in the Middle East

In turn, a working model for Mr. Thornburg may be the experiments carried on near Teheran by the Near East Foundation.

The Near East Foundation shortly after the close of World

in Turkey by the extension of her railway system to link it with those of Iran and Iraq. This and other Turkish modernization programs are concentrated in government hands.

Ambitious, modern plants have been established to fill needs which do not yet exist, while small factories to make soap or steel-tipped plows are lacking. Until the hiatus between modern factories and wooden-stick plowing can be bridged, there is little likelihood of a healthy economic program.

Thornburg argues that American investment cannot flow effectively, if at all, into Turkey until that country demonstrates by actions that it has abandoned former restrictions on outside capital, including all the bewildering apparatus of contradictory laws, which go under the general title of Etatism. This would undoubtedly mean modifying Turkey's present one-party system. It would mean stimulating political opposition and encouraging investment among the Turks themselves It would mean training thousands of Turks in management, engineering, and agricultural skills.

Start, Thornburg begs the Turks, on a small scale Don't try to calculate how much capacity you would need to make pitchforks or wagons for all Turkey; set up just one plant, and try it out. Don't break your backs on a mill to produce 500,000 tons of unnecessary steel; set up just one 50-ton jobbing iron foundry on the basis of existing demand.

But first of all, bring in experts—experts in government; in public works; in housing, chemistry, mining, geology; in agriculture, public health, education, economics. Let them multiply their kind by training young Turks. Before dumping more millions into new railway stock and tracks, put in charge one good railroad man, American style. Before putting millions into harbor modernization, increase production for export. Before creating elaborate new irrigation facilities, put to work the ones that are already three-quarters completed and for years have stood idle.

Turkey's Electrical Energy Institute has drawn up plans to construct thermal plants which within the next five years would multiply her annual electric power six and a half times, at a

delivering 300,000 barrels of oil daily to the Mediterranean, Aramco is laying 1,100 miles of roads, and the government is building 1,200 miles more.

Point 4 itself will launch its Arabian program on no such large-scale basis. Instead, the program in its first stages will consist primarily of elementary steps such as probing for underground water.

The great need of Arabia is water. Ancient, disintegrated catchments near Al Taif indicate that in bygone days Arabia had fertile, irrigated fields The idea of restoring this fertility has fascinated many Americans, including the late Franklin D. Roosevelt. In Frances Perkins' book, *The Roosevelt I Knew*,[4] she recalls the President's conversation with an Army engineer as he was being flown over the meager vegetation of Saudi-Arabia on his way home from Yalta:

"Why don't they raise something here? Is the soil absolutely infertile?"
"No," answered the engineer, "it is good soil and could be used if there were any water at all"
"Can't they irrigate?" asked the President
"They can't irrigate because there isn't any water here to irrigate with."
"But," said the President, "there must be some water here. The people must drink and the animals must be watered."
"Yes, there are wells and here and there is an oasis, but water, as you know, is sold at a high price."
"Well," he said, "how do they get the wells? Dig them?"
"That is the answer."
"How far below the surface is the water table?"
"About 50 feet."
"Is there real water there?"
"Yes, I think there is plenty of water 50 feet below the surface"
"Well, the solution seems to be to bring out some good pumps to pump up the water and irrigate the soil"
"Well," said the engineer, "that wouldn't do any good. It is so hot here that the sun would evaporate the water before it has done the soil any good and would leave it caked and dry"
"But the nights are cool. Why not pump the water up and irrigate at night when it will have time to sink into the soil? They really ought to be able to raise food. There must be a way if there is water underneath the soil."

4 (New York: the Viking Press, 1946)

industries. Work on the roads started in 1947, and 200 American engineers are completing them now with native assistance.

One road, running 65 miles north and south along the old British army route, links Kandahar with Spinbaldak at the Pakistan border. On the new highway Afghan trucks can speed their melons and grapes to market, taking only three hours instead of twelve for the trip and making it possible to double or triple fruit exports. The second road, 75 miles long, leads southwest to Girishk

Morrison-Knudsen is training local men as technicians and machinists so that once the construction work is finished the Afghans can themselves maintain roads, machinery, and irrigation canals

Coincidentally, American teachers are going to Afghanistan. Means are being sought of organizing American-staffed technical schools there, and of bringing Afghan pupils to the United States.

But in Afghanistan, as in Iran, there is danger that the superstructure may be built before the foundation is laid The Point 4 program for Afghanistan calls immediately for only the simplest reforms. Most Afghan homes, for instance, are made of mud-covered slats. The mud is constantly drying and flaking away. Squalor could be reduced and health improved if the Afghans were taught to make bricks of tamped earth Again, the Afghan educational problem is not primarily one of finding school buildings—there are buildings in adequate quantities. But there is no reserve of teachers Until there is such a reserve, there can be no modern school system in Afghanistan, and until there is a modern school system, the Afghans can scarcely be expected to assume responsibility for carrying on their own economic development program.

SYRIA

The danger of industrialization without a solid economic base has been vividly demonstrated in the recent experience of Syria. During the war Syrian capitalists built textile and glass mills

industries. Work on the roads started in 1947, and 200 American engineers are completing them now with native assistance.

One road, running 65 miles north and south along the old British army route, links Kandahar with Spinbaldak at the Pakistan border On the new highway Afghan trucks can speed their melons and grapes to market, taking only three hours instead of twelve for the trip and making it possible to double or triple fruit exports The second road, 75 miles long, leads southwest to Girishk

Morrison-Knudsen is training local men as technicians and machinists so that once the construction work is finished the Afghans can themselves maintain roads, machinery, and irrigation canals

Coincidentally, American teachers are going to Afghanistan Means are being sought of organizing American-staffed technical schools there, and of bringing Afghan pupils to the United States

But in Afghanistan, as in Iran, there is danger that the superstructure may be built before the foundation is laid The Point 4 program for Afghanistan calls immediately for only the simplest reforms Most Afghan homes, for instance, are made of mud-covered slats The mud is constantly drying and flaking away. Squalor could be reduced and health improved if the Afghans were taught to make bricks of tamped earth Again, the Afghan educational problem is not primarily one of finding school buildings—there are buildings in adequate quantities. But there is no reserve of teachers Until there is such a reserve, there can be no modern school system in Afghanistan, and until there is a modern school system, the Afghans can scarcely be expected to assume responsibility for carrying on their own economic development program.

SYRIA

The danger of industrialization without a solid economic base has been vividly demonstrated in the recent experience of Syria. During the war Syrian capitalists built textile and glass mills.

exchange for their present holdings Iraq would be the gainer, for it badly needs agricultural population

Today millions of people are being moved from one land to another If the lands were organized and homes provided, this particular movement could be made the model migration of history It would be a solution by engineering instead of by conflict.

The political realities of the moment unfortunately made it impossible for the Arabs to consider giving up their demand for sovereignty over Palestine, much less deserting it completely. Since 1945, however, a war has taken place. At least 700,000 Arabs have fled from Israel. The Israelis show small eagerness to have them back. The displaced Arabs are living in caves, in tents, in hovels, eking out the relief money granted them by the United Nations By comparison, model farms in Iraq would be Paradise.

Two hundred fifty thousand Jews of Iraq, Syria, Lebanon, Egypt, and Yemen meanwhile might well be persuaded to remove to Israel. Mass exchange of populations between Greece and Turkey after the First World War, shocking as it appeared to the world at the time, proved to be a highly successful excision of an ancient sore. Now, if ever, would seem to be the psychological moment for a much less difficult exchange of populations in the interests of Middle Eastern stability.

Whether the Iraquis would welcome immigrating Arabs is another question. "We do not want immigration," said a high Iraqui official recently, "even of outside Arabs—we want to 'born' our own population "

An Iraqui development program, however, appears to be inevitable. There is little question that *once the sieve has been caulked*, some form of irrigation and power development there will be proposed, not to say urged, by the United Nations and the West, and that the inducements to accept will be very strong One of those inducements—the eventual re-creation of a nation of 30,000,000 where now less than 4,000,000 drag out weary lives—will be hard to resist when its potentialities are fully realized.

Despite bitterness engendered by the Palestine war, the Middle East still looks upon the United States as being the nearest thing they have to a disinterested friend

Disinterestedness is not, to be sure, the altogether accurate word. A prosperous Middle East, like a prosperous Latin America or Africa, means a profitable market for the United States as well as Europe.

But quite apart from its possible market value, the Middle East today presents us with an opportunity of historic proportions. It is an essential area to us and the world—militarily, economically, and socially. Under the Bold New Program Americans can help to establish *more* Middle Eastern schools, *exchange more teachers and students, forward more* technical advisers, medical missions, books. Investments, factories—and peace—may follow.

If the opportunity is grasped, we can create the preconditions *now* for stability in the Middle East And stability in the Middle East is a long step toward stability everywhere.

10

Asia Must Be Saved by the Asiatics: a. *Southeastern Asia*

ON THE basis of the postwar record to date, there is little reason to think that the Far Eastern mainland will be saved from Communism. At least there is little reason to think it will be saved by the United States.

The Chinese Nationalist government fell like a rotten apple despite billions of American dollars spent on civilian goods and armaments. It may well be that we should have spent more; it may be that we should have given more enthusiastic encouragement, it may be that we should have supplied military leadership and armored divisions

The fact remains, however, that the Reds could not have overrun China so casually if the masses of Chinese had opposed them as tenaciously as they once opposed the Japanese.

your own high standard of living, my people will simply say to hell with you and turn to someone else."

The Pakistan Finance Minister added that the United States overestimates her ability to bolster any nation with American military production. A far surer way to halt the advance of internal Communism, he maintained, is to do something else that no Asiatic government can accomplish unaided—"to make two grains grow where one grew before."

If that were indeed all that was needed, the answer might be at hand. Techniques exist for vastly increasing the food production of the Orient. Many are already being put to work.

Take, for instance, the matter of rinderpest.

Rinderpest is a disease which throughout Asia destroys 2,000,000 head of cattle a year. Each year in China alone it kills 1,000,000—and Chinese farmers depend on the China cow and the water buffalo to till their ancient fields.

But a contest of wits during World War II ended the invincibility of rinderpest. British Secret Service men discovered that the Germans were planning to import the dread disease into the United States. In co-operation with the United States government, a highly secret laboratory was established on an island of the Saint Lawrence River. Here experiment after experiment finally resulted in a rinderpest vaccine of virtually 100 per cent effectiveness.

In 1948 the Food and Agriculture Organization, working with the Chinese Nationalist government, developed a way to produce the vaccine inexpensively in enormous quantities. Before the civil war hit south China, an FAO program was under way to inoculate 15,000,000 animals there. For a comparatively small sum, estimates the FAO, it would be possible to eliminate the scourge of rinderpest throughout the entire world in ten years.

Then there is rice—the basic food of more than half the world's people. Rice is now in critically short supply. Fifteen million acres of rice paddies, abandoned during the war, are not yet back in production. Another 25,000,000 acres of po-

raised 50 or 100 per cent by irrigation alone, while manures could add 20 or 30 per cent more. Ninety million acres—26 per cent of India's total cultivable area—still lie unused

The willingness of Asiatics to profit by modern methods of farming has been illustrated by the experience of such schools as the Missionary Allahabad Agricultural Institute in north central India. The Institute developed steel plows to double the width of the Indian furrow—and the natives immediately began clamoring for them It cross-bred cattle until milk production rose by a third—and the Indians carried on the work with their own cows

But these simple, quick, and relatively inexpensive programs can do only part of the job of increasing the food supply of the Far East

Pre-eminently there must be land reform, plots must be big enough to make efficient farming feasible There must be changed fertilizer practices—which can be had only when artificial fertilizer is available at a price that the farmers can afford to pay There must be more water for irrigation Some day there must be mechanized farms All these changes will take a long while—and most of them cost a lot of money.

The average farmer of Southeast Asia has less than 5 acres of land at his disposal, in contrast to 145 acres per farm in the United States Frequently the holdings are broken into a number of isolated strips. Land reform and co-operatives to make the peasant an efficient producing agent were a rallying cry of the Communists in China Land reform and co-operatives in the other countries of the Far East are essential if the fate of China is not to be theirs also

And if land reform is essential, improved fertilizer practices are scarcely less so

It may be true as Sir Albert Howard says, that "the agricultural practices of the Orient have passed the supreme test—they are almost as permanent as those of the primeval forest, of the prairie, or of the ocean The smallholdings of China, for ex-

Siamese are at work on the Chao Phya program—14 separate irrigation projects affecting 5,000,000 acres of land.

Greatest of the schemes which have any immediate prospect of execution lies in India, where the government seeks to increase food production not simply by the 2,300,000 tons of food grain a year needed for a passable diet but by 10,000,000 tons.

India's plan envisages dams and barrages on most of her major rivers—rivers with strangely beautiful names like Kosi, Tista, Godavari, Tunga Bhadra, Dhirangarh, Chambal, Damodar, Kosi, Brahmaputra. The dams will control floods, conserve to irrigate more than 6,000,000 acres. They will also increase India's electric power by 20,000,000,000 kilowatt hours a year—four times her present production—raising her potentially to the first rank of industrial nations.

Norris E. Dodd has estimated the world deficit in foodstuffs to be not higher than about 10 per cent of present world requirements. As far as the Orient is concerned it appears possible to agree with his statement that his deficit could easily be turned into relative abundance even in the face of population trends

prise can be reconciled with the aims and expectations placed before and entertained by the mass of the people [8]

One of the most vital services that American capital can perform is to act as guide, philosopher, and friend to Asiatic business. Most American businessmen have learned—some of them the hard way—that in the long run the most profitable enterprise is the one which renders the best treatment to its own workers and the greatest service to its customers It may be doubted whether Indian industrialists—a small and extremely conservative group of men—have yet absorbed this lesson As industrialization proceeds, American capital in Asia can do much to preserve competition prevent cartelization, and help assure a rising standard of living

When private capital last year was loaned to India to rehabilitate and expand her railway facilities that capital was not only relieving distress but promoting industrial development As the *New York Times* commented There is nothing of the global do-gooder in the idea of making a sound loan for an obviously practical purpose It is Point 4 in action

In many instances however, the time for private capital investment has not yet arrived The Bold New Program has first to create the conditions of health agricultural efficiency, and technical skills which can make investments attractive

One of the first major projects envisioned for Point 4 is a pilot plant in the Far East to show how hydroelectric development can be combined with sensible soil conservation and later with industrial development The planning of such a plant may be completed in 1950 and the plant itself the following year Thereafter similar pilot plants could be established in other parts of the world at a starting rate of about one a year

I repeat once more that, in the last analysis the West can furnish only the pilot plants—the underdeveloped areas will have to produce the rest

We cannot save Asia from Communism But with our help, the Asiatics may save themselves

[8] D R G K I The Economic Prospect for India *Pacific Affairs* (June, 1949)

Such a program may yet come about, perhaps with aid from Western Europe as well as the United States. So far, however, the United States appears dubious of making astronomical financial commitments in the Far East. She is straining herself to give even Europe a chance for survival.

An interrelated development program for Oceania, moreover, would in all probability be keyed on Japan, which is the [illegible] and it will be a long while before Japan is popular [illegible] by her island neighbors to the south.

Worse [illegible] among the islands could be as[illegible] with the economic development [illegible] the heart of the matter would still [illegible] for the heart of the matter is China. As long as China [illegible] a [illegible]

The largest public work yet introduced into Australia is the Snowy River project, which will double the Dominion's production of electric energy.

Flowing southeast from the Australian Alps of New South Wales, the Snowy River now empties uselessly into the Tasman Sea. Under a program laid down last year, 100 miles of tunnels driven through the Alps will divert virtually all the Snowy's headwaters—nearly half its total volume—into the nearby Murrumbidgee and Murray Rivers. The dropping water will pass through 16 underground power stations with the enormous generating capacity of 1,720,000 kilowatts. Seven dams will back up 1,800,000 acre-feet of water for irrigation.

The Snowy River project will cost between $550,000,000 and $640,000,000. Eight years will pass before the first water is available for irrigation, and perhaps twenty-five years before the plan is completed.

The scheme was initially approved as a defense measure, and the underground power stations will be scattered strategically through difficult mountain country. The peacetime possibilities of the project, however, are no less important. Says a *New York Times* dispatch:

> Power not required for defense purposes in peacetime would be distributed through the power grids of New South Wales and Victoria for industrial use and the irrigation authorities of the two states would use the water for increased food production. The power would be delivered to Melbourne and Sydney at about half the cost of that now generated by stations burning coal or oil. If the power is to be used for new industries, established in inland towns near the source of supply, the cost may be little more than a third of the present cost of power in Melbourne and Sydney.
>
> The potential power output of the project represents the consumption of 4,000,000 tons of coal a year, about one third of Australia's present output, or of 547,000,000 gallons of oil a year. Australia imports all her oil. The saving that would be entailed by generating electrical output by water instead of coal is estimated to be almost $22,400,000 a year.

On the islands between Australia and Japan, an industrialized

standing on their heads From that vantage point, it becomes perfectly possible to solve the riddle of the Orient by solving the riddle of Japan.

But Japan is only an offshore extension of Asia. If Asia is saved, Japan is saved also If Asia is lost, there is no way for a free Japan to survive. "Basic solutions for Japan," comments Jerome B. Cohen, "can come only with the complete integration of its economy with those of other Far Eastern countries. Efforts in Japan alone are bound to be unsuccessful."[1] And G. B Sanson, International Research Chairman of the Institute of Pacific Relations, adds "It may be that hungry, ill-clothed and worried men in some countries will pour their energies into a struggle for political freedom, but it is extremely doubtful whether Japan is one of those countries."[2]

Granted an integrated economic program and a stable East Asia, Japan might export enough goods to pay for the imports which she must have to maintain herself on a reasonable living level. The Japanese Economic Stabilization Board estimates that for a self-supporting economy by 1953 Japan must multiply the 1947 level of her exports nine times and that of her imports three times. She must have credits from the United States of $2,000,000,000, she must put a stop to inflation, she must solve her deficiencies in power supply and transportation.

Though Japan is a highly industrialized nation by Asiatic standards, by American standards she is just getting started. At the end of 1949, for example, she had 1½ telephones to 100 persons, America had more than 1 telephone to every 3 persons The Stabilization Board estimated that this one lack was costing Japanese business more than $100,000,000 a year. In many offices, it calculated, a single telephone could replace two employees.

Though all Japan's goals for 1953 are extraordinarily difficult, the record indicates that none is impossible. Between 1930

[1] *Japan's Economy in War and Reconstruction* (Minneapolis University of M[illegible]a Press, 1949)

What about China, now that the Communists own her?

After the First World War, Dr. Sun Yat-sen, founder of the Chinese Republic, outlined a program for harnessing the dragon. He proposed introduction of modern agriculture, communication, transportation, and industries. His proposals staggered men's minds: the creation of three great ports and many smaller ones, the construction of public utilities and of modern cities at all transportation centers, the development of water power, iron and steel works and cement plants. Elements of the program were mineral and agricultural development, reforestation, tremendous irrigation complexes, great new canals, thousands of miles of telegraph and telephone lines and radio stations.

Until recently, the Chinese believed that with American help they might achieve most of the Sun Yat-sen goals in a twenty-year push. According to Theodore H. White, it was hoped to create over that period 100,000 miles of railway—half to be double-tracked—which would utilize 25,000 locomotives, 300,000 freight cars, 30,000 passenger cars. Half a *million* new autos would be introduced each year for ten years, 1,000,000 miles of highway would be laid down, power plants with a 20,000,000-kilowatt capacity would be erected; 80,000,000 telephones would be installed, 1,000,000 homes a year would be built. There would be 10,000,000 tons of ocean-going shipping, 320,000 cotton looms, 16,000 woolen looms, 94,000 silk looms.

But the postwar years did not develop as the planners had expected. And at last the Communists of China cut off the only aid which could possibly bring them to a fully industrialized China in the foreseeable future—aid from the United States.

For fifty years, the American people have been the nearest thing the Chinese have known to reliable *friends*. An independent China, uncontrolled by any power, has always been to our interest. We have stood for that principle at times against a line-up of all the other major powers of the world. The United States in coming years will continue to promote Chinese independence

. Nitrogen, they declare, can pay the entire cost of the e project within fifteen years of its completion, while 50 per cent of its power potential still available for s own industrial development.

reliminary development proposal was put forward dur- e war by Alex Taub, then Chief Engineer of our Foreign mic Administration. At his request, American concerns ed detailed specifications of what it would cost to set up omically feasible units of their industries in China. The print called for 625 factories and 260 thermal power-pro- ng plants, most of the latter to be erected on sites selected later hydroelectric developments. When the dams were ly, the thermal units would be used as auxiliaries or removed ther locations. The program was to begin with the produc- of coal—China's reserves are the fourth largest in the world and of steel. Next step was to be power alcohol refineries to set China's lack of oil. In recognition of the transportation oblem, a key part of the Taub scheme was a simple engine ounted on an iron framework and four wheels. One of the sic ideas was to export American know-how, so that after an tial period of technical tutelage the Chinese might go ahead n their own.

But industrialization must be a social force, acting for the enefit of the many as well as the few. The city ports of Shang- ai have already experienced industrialization—industrializa- ion with social effects markedly similar to those in British and American factory towns a hundred years and more ago Prewar ghai has been cited by Morris Cooke as "a prime example of a distant industrialized people exploiting a distant agricul- tural people for the former's advantage, not the latter's" Mr. Cooke continued:

Modern machinery was brought into a reservoir of cheap labor. Prod- ucts were then manufactured at low cost but sold primarily on a foreign market yielding foreign credits. Shanghai did not buy the major portion of its food supply from Chinese farmers Shanghai bought most of its wheat, not from Chinese farmers, but in foreign markets. The same was true of rice to a somewhat lesser extent Chinese farmers, on the other

and unity It is conceivable that as the Chinese people gradually realize how heavy a price Moscow asks for her benevolence, they will again appreciate the quality of ours.

If ever the day should arrive when it is again feasible for the United States to extend aid to China, the blueprints are ready.

Dam projects awaiting execution in China can increase her electric production fifteenfold within a score of years.[3] The increase would amount to 115,000,000,000 kilowatt-hours annually—about as much as was used in 1936 by France, Germany, Russia, and the United Kingdom combined To match the energy latent in the rivers of China would require more than 1,000,000,000 strong men laboring eight hours a day, six days a week

Huge dams will rise some day on the Yangtze, the Te-Tu-Ho and Ma-Pien-Ho, the upper Ming-Kiang and Kwan-Hsien, the Tang-Lang-Chuan, the Lung-Chi-Ho, the upper reaches of the Yellow River.

Most far-reaching of the projected developments—and farthest in the future—is that on the Yangtze River, 600 miles from Shanghai. This scheme, unique in engineering history, will eventually irrigate 10,000,000 acres, check the floods that have ravaged China for centuries, and enable ocean-going ships to sail inland to Chungking Costing $1,000,000,000, it will have hydroelectric installations with a generating capacity of 10,560,-000 kilowatts and a production of more than 81,000,000,000 kilowatt-hours a year. It will make possible metallurgical industries, electrified railroads, and vast quantities of nitrogen for China's depleted soil.

John Savage, American designer of Grand Coulee, Hoover, Bonneville and many of the East Indian dams named in preceding pages, considers the Yangtze project the climax of his engineering career. Savage and his backers contend that nitrogen fertilizer can be furnished by the Yangtze development in such abundance that not only will China's soil be enriched, but 100,-000,000 sterile acres in the United States can be revivified by nitrates selling at half the delivered price of present nitrog

[3] Major hydroelectric schemes contemplated for China are listed in the appe

imports. Nitrogen, they declare, can pay the entire cost of the Yangtze project within fifteen years of its completion, while leaving 50 per cent of its power potential still available for China's own industrial development.

A preliminary development proposal was put forward during the war by Alex Taub, then Chief Engineer of our Foreign Economic Administration. At his request, American concerns supplied detailed specifications of what it would cost to set up economically feasible units of their industries in China. The blueprint called for 625 factories and 260 thermal power-producing plants, most of the latter to be erected on sites selected for later hydroelectric developments. When the dams were ready, the thermal units would be used as auxiliaries or removed to other locations. The program was to begin with the production of coal—China's reserves are the fourth largest in the world—and of steel. Next step was to be power alcohol refineries to offset China's lack of oil. In recognition of the transportation problem, a key part of the Taub scheme was a simple engine mounted on an iron framework and four wheels. One of the basic ideas was to export American know-how, so that after an initial period of technical tutelage the Chinese might go ahead on their own.

But industrialization must be a social force, acting for the benefit of the many as well as the few. The city ports of Shanghai have already experienced industrialization—industrialization with social effects markedly similar to those in British and American factory towns a hundred years and more ago. Prewar Shanghai has been cited by Morris Cooke as "a prime example of a distant industrialized people exploiting a distant agricultural people for the former's advantage, not the latter's." Mr. Cooke continued:

> Modern machinery was brought into a reservoir of cheap labor. Products were then manufactured at low cost but sold primarily on a foreign market yielding foreign credits. Shanghai did not buy the major portion of its food supply from Chinese farmers. Shanghai bought most of its wheat, not from Chinese farmers, but in foreign markets. The same was [illegible] of rice to a somewhat lesser extent. Chinese farmers, on the other

dams, harbor facilities, dikes, terraces, air fields And they may do so without greatly reducing agricultural output, if at the same time they apply improved techniques to the farms It would be stupid, therefore, to take for granted that China will make no economic improvement under the Communist regime.

"We of the West," comments one economist,[4] "must not overemphasize the irreplaceability of machinery. Innumerable processes which would be fantastically expensive in the United States, if carried out by hand labor alone, may be done most economically in a country like China with no mechanical help at all The bulk of Chinese freight is, and probably will for some time continue to be, carried or pushed by human beings Westerners tend to ask: 'What is the use of building roads in China if there is no way of making trucks available?' The answer is that a man with a barrow or a cart can move much more freight per day on a smooth, graded road than on a rocky path."

But even if large-scale capital construction does take place in Communist China, the case of the rest of Asia is by no means hopeless. It is perfectly possible for those countries too to draw on their great reservoirs of cheap man power to create roads and dams, if they possess the necessary energy and determination. To be sure, in a free society workers must be treated and recompensed as free men; they cannot, as in a Russia or a China, be forced to work whether they want to or not. But in the long run a free man working for a decent wage is bound to outproduce a slave And to free Asia's mobilized resources of man power she can add a key element of which the Chinese have wilfully deprived themselves—the machines, capital, skills, and democratic flexibility of the western world.

In counting the assets which, properly used, can raise the living levels of mankind, it is as well not to forget that men themselves, even if they work with hands instead of bulldozers, are the greatest asset of all.

[4] Warren Wilhelm, "Soviet Central Asia Development of a Backward Area," *Foreign Policy Reports* February 1, 1950.

piling basic raw materials But to whip that shortage, Europe must produce more food and goods *at lower costs*; and she must consume at home a greater part of what she produces

But for mass production and lowered costs there must be a *mass market*; and the European market is whittled at—nay, chopped to mincemeat—by cartels, by juggled currencies, by tariffs.

Despite the valiant efforts of Paul Hoffman of ECA, competition between Western European states for the limited dollar markets continues at fever pitch. Despite devaluation of the British pound, British dollar reserves are still in grave danger. Despite gestures at lowering intra European tariff and quota barriers, cartels continue to impede a free economy and the volume of trade between European countries shows little signs of rising

The Economic Co operation Administration, therefore, has added to its task of financing commodity purchases by Europe the further chore of establishing a clearing union to permit a *freer flow of trade within Europe*. The clearing union would make money available to cover trade deficits incurred through the removal of tariff and import quotas ECA hopes ultimately to see a Western Euorpe which is one great free-trade market of 250,000 000 people

But even if ECA accomplishes its historic task, Europe will still be a retarded area by comparison with the United States. By many great efforts, and with all the assistance that America can give, she has now roughly equaled her productive level of 1938, but since 1938 the productive capacity of the United States has more than doubled

The result is a Europe which has increased her productivity enough to require outside markets but not enough to compete on an even basis with the United States *in those markets*.

To lessen her need for food imports, Europe has to reform antiquated landholding systems and raise more crops on the same amount of land. To prevent a continued and catastrophic imbalance of productivity between the eastern and western hemispheres, she needs to adopt American industrial techniques

piling basic raw materials. But to whip that shortage, Europe must produce more food and goods at lower costs; and she must consume at home a greater part of what she produces.

But for mass production and lowered costs there must be a mass market; and the European market is whittled at—nay, chopped to mincemeat—by cartels, by juggled currencies, by tariffs.

Despite the valiant efforts of Paul Hoffman of ECA, competition between Western European states for the limited dollar markets continues at fever pitch. Despite devaluation of the British pound, British dollar reserves are still in grave danger. Despite gestures at lowering intra-European tariff and quota barriers, cartels continue to impede a free economy and the volume of trade between European countries shows little signs of rising.

The Economic Co-operation Administration, therefore, has added to its task of financing commodity purchases by Europe the further chore of establishing a clearing union to permit a freer flow of trade within Europe. The clearing union would make money available to cover trade deficits incurred through the removal of tariff and import quotas ECA hopes ultimately to see a Western Euorpe which is one great free-trade market of 250,000,000 people.

But even if ECA accomplishes its historic task, Europe will still be a retarded area by comparison with the United States By many great efforts, and with all the assistance that America can give, she has now roughly equaled her productive level of 1938, but since 1938 the productive capacity of the United States has more than doubled.

The result is a Europe which has increased her productivity enough to require outside markets but not enough to compete on an even basis with the United States in those markets.

To lessen her need for food imports, Europe has to reform antiquated landholding systems and raise more crops on the same amount of land. To prevent a continued and catastrophic imbalance of productivity between the eastern and western hemispheres, she needs to adopt American industrial techniques

yarn and woolen cloth are finding a significant market in the United States.

Technical aid to agriculture under Point 4 of course cannot cancel out economic and social abuses. In Europe as in Asia, a master key to a vigorous economy and the maintenance of a non-totalitarian political system lies in land reform. Landholding abuses have long provided a rallying point for Communists. More than any other one thing, say some students, lack of land reform was responsible for the Bolshevik success in Russia's 1917 revolution. The future of Italy may depend on the speed with which the De Gasperi government fulfills its promise to turn 3,750,000 acres over to the peasants

The need for rural improvement is, if possible, even more pressing in Greece than in Italy. A team which surveyed the economic problems of Greece in 1947[2] returned with a report that she had but 1 31 acres of arable crop land per farm person. The average Greek farm family earned $200 a year—a per capita average of well under $50 Added to the constant threats of famine, pestilence, and starvation, the Greek peasant lived from 1940 to 1949 in the shadow of armed destruction. Small wonder that the death rate in Greece today is 40 per cent higher than in the United States!

But even in unhappy Greece there have been vivid demonstrations of how goodwill, intelligence, and a very few dollars can work miracles of regeneration in crops and human beings alike More than half of the country's livestock, for instance, had been destroyed in World War II To increase the flow of milk, the Near East Foundation in 1945 resorted to artificial insemination Six pure-bred brown Swiss bulls were shipped from America. The Foundation established insemination routes. Each morning an expert starts out with a supply of semen, stopping at preappointed rendezvous where peasant women wait with the cows that are to be bred By the end of 1949 more than 25,000 healthy calves had been born to the six brown bulls

[2] Smothers, McNeil and McNeil *The Greeks* (New York Twentieth Century Fund, 1948)

country—having poured hundreds of millions of dollars into ending the civil war which symptomized the Greek disease—might not now balk at spending tens of millions in an effort to cure the disease itself.

TECHNICAL AID COMBINED WITH DOLLAR INVESTMENTS IN INDUSTRY

The Industrial Fatigue Research Board says that Great Britain, industrially one of the most efficient European nations, could increase her steel output 50 to 100 per cent by using improved methods Britain's Coal Conservation Committee has reported that judicious use of electric power could save 55,000,000 tons of coal a year

Throughout Europe, factories are operating at what Americans would consider to be barbarously low efficiency. Frequently the cause is not feeble skills or poor machines but fragmented markets and old habits of high price and low turnover. The difficulty of cutting costs is illustrated by the fate of two continuous-strip rolling mills recently set up in France. Run at capacity, the mills could bring about decisive reductions in the cost of making flat steel—the kind that is used in your automobile and your tin cans With cheaper steel, France could compete more handily in the world market She would need fewer American dollars—and would get more Reported Michael L. Hoffman in the *New York Times* late last year

> Economists have calculated that before the first continuous strip mills were established in the United States the price of flat products bore a relation to the price of steel ingots of 225 to 100 After fifteen years this ratio was reduced to 119 to 100 The United States industry passed on practically all of the advantage of lower cost to consumers, and the consumption of flat products in the United States rose nearly 300 per cent during the same period, one steel expert said.
>
> It is generally agreed that Europe needs lower steel prices to bring down the whole range of costs of steel using industries and to recapture its former 80 per cent of the world steel exports. . However, already there are signs that when the continuous strip mills come into operation in France efforts will be made to keep prices up to a level that will main-

like the Tennessee Valley Authority in the United States. Sometimes such developments have as a primary purpose the production of hydroelectric power. This is the case with projects now afoot in the Scandinavian countries. Or they may be aimed at the reclamation of land, as in the Netherlands. Or as in the Monnet Plan of France they may combine many purposes in one—power, navigation, flood control, industrialization.

Many years ago, France bettered the welfare of tens of thousands of her citizens, and made room for tens of thousands more, by draining 2,500,000 acres of marshland and changing 500,000 acres of sand dunes to forests. The entire continent was better off because France was better off.

An even greater reclamation project—one familiar to every American school child—is Holland's Zuyder Zee enterprise, which has replaced salt ocean with bounteous farms.

Twenty-five per cent of the land in Holland lies below sea level. Forty per cent lies below the level of high floods—and the land is continuing to sink. As early as 1300 A.D. the Dutch were reclaiming land from the Zuyder Zee. The process has been described by the Czechoslovak author Karel Capek: "You take a bit of sea, fence it and pump it out, and at the bottom is left a deposit to which a respectable slice of Europe, by means of its rivers, supplies its best swampy soil, and the sea its finest sand, the Dutchman drains it, and sows grass there, the cows feed on it, the Dutchman milks them and thus makes cheese ..."[3]

By 1930 the Dutch at Wieringermeer had retrieved some 49,000 acres from the sea. The Urkerland Polder, more than twice as large as that at Wieringermeer, first became dry land in September, 1942.

Two more reclamation projects, in the southwestern and southeastern portions of the Zuyder Zee, will bring the total reclaimed area of Holland to 550,000 acres, increasing her cultivated land by 10 per cent.

No less intriguing than the land reclamation in Holland is

[3] Quoted in *Fresh Fields and Polders New*, a pamphlet furnished by the Netherlands Information Bureau.

At Dongère Mondragon, on the Rhône River, a dam is under construction which by 1952 will be supplying France from a 360,000-kilowatt installation. Dams at Ottmarsheim and Chastang, and on the Dordogne River, will bring the total increment of hydroelectric power to 3,000,000 kilowatts, while steam plants will add as much again. All told, the electrical energy available to France will be almost doubled. There will be more machinery in French fields, better equipment in French farm houses

A model for European development is the Aar valley of northwestern Switzerland. In the nineteenth century the Aarians lived in a primitive community, where the houses were thatched and wolves and wild boar roamed the hills "The town of Rothrist," reports Morris Cooke, "cut down trees from the mountainside and sold the lumber in order to buy ship passage to [the United States] for its surplus and very poor population It was shortly after this that the industrial development of Rothrist and the Valley of the Aar began. And while the three hundred voyagers who left the Aar to seek new opportunities in the New World were settling in the industrial slums of America, in many cases to remain there, the Aar valley was gradually being converted through considered industrial development to an area of social and economic abundance."[4]

The Aar development was made possible by the introduction of hydroelectricity. "Although the region is highly industrialized," adds Cooke, "it gives the impression today of a well-kept park Factories, homes, and farms give every appearance of prosperity."

Americans have not the greatest per capita consumption of electric power in the world Their consumption is equaled or surpassed by that of Norwegians, Swiss and Swedes, who live in lands of abundant waters and raging cataracts.

Sweden has no resources of oil or natural gas. Instead she has flowing water. From Swedish streams comes more than 90 per cent of her electricity, which already amounts to 2,060 kilo-

[4] "Plain Talk About a Missouri Valley Authority" *Iowa Law Review* (January, 1947)

At Dongère Mondragon, on the Rhône River, a dam is under construction which by 1952 will be supplying France from a 360,000-kilowatt installation. Dams at Ottmarsheim and Chastang, and on the Dordogne River, will bring the total increment of hydroelectric power to 3,000,000 kilowatts, while steam plants will add as much again. All told, the electrical energy available to France will be almost doubled. There will be more machinery in French fields, better equipment in French farmhouses.

A model for European development is the Aar valley of northwestern Switzerland. In the nineteenth century the Aarians lived in a primitive community, where the houses were thatched and wolves and wild boar roamed the hills. "The town of Rothrist," reports Morris Cooke, "cut down trees from the mountainside and sold the lumber in order to buy ship passage to [the United States] for its surplus and very poor population. It was shortly after this that the industrial development of Rothrist and the Valley of the Aar began. And while the three hundred voyagers who left the Aar to seek new opportunities in the New World were settling in the industrial slums of America, in many cases to remain there, the Aar valley was gradually being converted through considered industrial development to an area of social and economic abundance."*

The Aar development was made possible by the introduction of hydroelectricity. "Although the region is highly industrialized," adds Cooke, "it gives the impression today of a well-kept park. Factories, homes, and farms give every appearance of prosperity."

Americans have not the greatest per capita consumption of electric power in the world. Their consumption is equaled or surpassed by that of Norwegians, Swiss and Swedes, who live in lands of abundant waters and raging cataracts.

Sweden has no resources of oil or natural gas. Instead she has flowing water. From Swedish streams comes more than 90 per cent of her electricity, which already amounts to 2,060 kilo-

*"Plain Talk About a Missouri Valley Authority," *Iowa Law Review* (January, 1947).

The actual production in 1947 was less than 2,500,000,000 kilowatt-hours a year.

By 1950, however, the Finns had raised their supply of electricity nearly twofold. The Imatra Power Company was building 8 hydroelectric plants along the Oulu River, sometimes laying log roads 40 or more miles across treacherous swamps for the power lines. The Pohjola Power Company was constructing 20 power stations along the Kemi and Ii Rivers in northern Finland, regulating the supply of water by means of artificial reservoirs.

INTERNATIONAL CO-OPERATION

For fullest efficiency, development projects may ignore national boundaries. Power from the River Shannon, in Eire, helped to electrify most of Ireland as a result of common-sense, supra-political co-operation between Eire and the United Kingdom—two countries bitterly divided by both history and religion.

On the European continent as well, regional development projects can teach mutually suspicious nations a much needed lesson in the benefits to be gained from acting jointly to create a more favorable physical environment.

Widely discussed is the proposal for a Rhine-Danube canal, which can speed the development of 76,000 square miles inhabited by 45,000,000 people in parts of France, Germany, Belgium, Holland, and Luxembourg. It can create realistic preconditions for a lowering of trade barriers. It can weld split and antagonistic sections into a natural geopolitical region, at peace by reason of its economic coherence.

It can do more. It can connect the West with Central Europe in a single great waterway flowing between Rotterdam on the North Sea and Constanta on the Black Sea—a waterway that some day may wash the iron curtain itself away.

The significance of the Danubian connection between West and East, between freedom and slavery, is difficult to overesti-

The financiers, the economists, and the politicians have been working over Europe with indifferent results ever since the end of World War II. The time has come to make room for the engineers

13

Slave Europe — A Body Without a Head

IF EUROPE were a living organism, its greatest blood vessel would be the Danube River. In the 380,000-square mile basin of the Danube 75,000,000 people live, breathe, and have their restricted being

The Danube River is nature's great protest against Europe's man made boundaries—against arbitrary state lines and economically nonsensical iron curtains. As long as the Danube flows, men will still hope for a federation of Eastern Europe—and friendly trade relations with the West.

Already the Danube provides an unmendable rent in the barrier which Russia has laid down between her satellites and the rest of the world. In Bulgaria, in Czechoslovakia, in Hungary, in Rumania, in Yugoslavia, it reminds subjects and rulers alike that in spite of man rivers still find the sea.

A thousand years and more ago Charlemagne suggested that trade with the Orient would be quickened if the Danube were enlarged into a navigable waterway running all the way from the North Sea to the Black Sea. Ludwig I of Bavaria dreamed of such a waterway in the nineteenth century. After World War II there was again talk of a 370-mile canal which would make Charlemagne's and Ludwig's dream a reality by connecting the Rhine-Meuse watershed with the Danube basin.

A unified development project along the Danube could create one of the world's great cornucopias. It would not only expand transportation but increase the area's farm productivity, now less than half that of Western Europe. It would develop great quantities of hydroelectric power. It would raise educational and social standards. The processing of farm and forest prod-

The financiers, the economists, and the politicians have been working over Europe with indifferent results ever since the end of World War II The time has come to make room for the engineers

13

Slave Europe — A Body Without a Head

IF EUROPE were a living organism, its greatest blood vessel would be the Danube River In the 380,000-square mile basin of the Danube 75,000,000 people live, breathe, and have their restricted being

The Danube River is nature's great protest against Europe's man made boundaries—against arbitrary state lines and economically nonsensical iron curtains As long as the Danube flows men will still hope for a *federation of Eastern Europe*—and friendly trade relations with the West

Already the Danube provides an unmendable rent in the barrier which Russia has laid down between her satellites and the rest of the world In Bulgaria in Czechoslovakia, in Hungary, in Rumania in Yugoslavia it reminds subjects and rulers alike that in spite of man rivers still find the sea

A thousand years and more ago Charlemagne suggested that trade with the Orient would be quickened if the Danube were enlarged into a navigable waterway running all the way from the North Sea to the Black Sea Ludwig I of Bavaria dreamed of such a waterway in the nineteenth century After World War II there was again talk of a 370 mile canal which would make Charlemagne's and Ludwig's dream a reality by connecting the Rhine Meuse watershed with the Danube basin

A united development project along the Danube could create one of the world's great cornucopias It would not only expand transportation but increase the area's farm productivity, now less than half that of Western Europe It would develop great quantities of hydroelectric power It would raise educational and social standards The processing of farm and forest prod-

21,300,000 tons of raw steel; we made more than four times much Her estimated production of shoes was around the 19 level of 167,000,000 pairs—less than one pair per year for ev n. Livestock, much of which was destroyed by the inv ing Germans, remained well below prewar totals. Only in e tric power, with an annual rate estimated at 75,000,000, kilowatt-hours, was she appreciably above 1940 levels; United States production of electricity is about 300,000,000, kilowatt-hours a year.

This is by no means to say that Russian productivity wil rise, or that she has not carried out great projects. Warren helm, of the Russian Research Center at Harvard Unive estimates, for example, that in the decade which ended in the industrial and agricultural output of Soviet Central went up 2 5 times, with a corresponding or greater improv in conditions of health or education.

Projects of equal scope are now under way. A few of t

1. Between 1924 and 1948 the Soviet Union planted 000 acres to trees. The postwar shelter belt program ultimate afforestation of 15,000,000 acres—an area h size of England—and protection thereby of more tha 000,000 acres State tree belts will extend nearly 4,000

2. A great part of the national effort is still being de Siberia. On the mighty Syr-Darya River of Uzbegistan tral Asia, the new Farkhad power station will supply h tricity to scores of new factories and mills. It will tur thousands of acres of parched land on the "Hungry into pastures, orchards, and cotton fields. A second an equal power potential is scheduled to rise a few m backing up a reservoir of 200,000,000,000 cubic fee for irrigation.

3. Typical of soaring Russian imagination and do sian perseverance is the work of the Institute o Frozen Soil. Formed in 1930, the Institute operates

it is of the essence that private rather than public investment abroad be America's keynote in Point 4

Our Tennessee Valley Authority is a public corporation. It conserved soil, prevented floods, made electric power available. But once the TVA had made the valley a profitable investment area, private capital gravitated there. It established industries large and small. It hired according to its needs.

Just as during the nineteenth century the United States federal government threw open public lands for individual ownership—as it still is doing through irrigation and reclamation projects—so in the Tennessee Valley Authority it opened a new sluice gate through which enterprise might pour. Without that inpouring, the Tennessee Valley Authority would still have conserved soil and prevented floods, but it would not have quickened the pace of an entire region's economy.

The government provided the instrumentality but avoided prescribing its use The use was decided by states, by communities, by power boards—and by individuals The Authority experts were available for consultation, but the local areas made the decisions

In Russia and Eastern Europe, on the other hand, there is no private capital to rush through the sluice gates Newly available *power is used in fulfillment of ponderous governmental programs. It is turned into tractors but not into pleasure cars; into work boots but not into dancing pumps, into army uniforms but not into play skirts*

But the most important point is not that competitive enterprise in a democracy would make dancing pumps as well as work shoes and pleasure cars as well as tractors The point is that it would make them faster and better and cheaper than government, with more consideration of the working men and women involved, because competitive private enterprise has to be flexible, alert, efficient, and considerate to survive

A basic purpose of the Bold New Program is to seek out and encourage investment by entrepreneurs living in the retarded areas themselves, thus helping to develop a stable middle class

tion that an imminent and catastrophic western depression would force a resumption of East-West trade on terms laid down by the East. If there is no such depression, it is hard to see how Russia can avoid making gestures in the not-distant future that are aimed at putting at least a semi-colon, if not a period, to the cold war.

Russia and Eastern Europe are not only retarded—they are shackled with a political and economic system which inevitably must result in still greater relative retardation. Even if the United States and other western nations were eager to speed balanced economic progress behind the iron curtain, our efforts could not offset the ossifying influence of state slavery.

Individual freedom is the handmaiden of progress—freedom, within the limits of the general welfare, to experiment, to err, to learn, to start again, to set private goals and win private rewards. Until Communist Russia and her satellites accept that freedom, they will provide no competition for American men and machines. And when they do accept it, they will no longer be Communist.

economic, social, health, and related problems and international cultural and educational co-operation."[2]

As a result of President Truman's Point 4 proposal, the United Nations multiplied its own co-operative schemes for world development more than ten times. An expert body of international civil servants was set up to receive, sift, schedule, and act upon requests for aid from underdeveloped countries. Expenditures were forecast at $100,000,000 over a two-year period. For lack of organization and technicians, the initial expenditures will probably be considerably less than that amount.[3]

Co-operation between different UN agencies was already a commonplace in 1949 "The World Health Organization and the United Nations Educational, Scientific and Cultural Organization," reported the Secretary General, "have worked together in a fundamental educational programme of which health education was an important aspect Field personnel of WHO and FAO are currently laying the basis for a joint project for malaria control and food production in South Asia Personnel from WHO, FAO, the [International Monetary] Fund, and UNESCO have taken part in a comprehensive economic survey mission organized by the United Nations The Bank and the Fund work closely together in making technical studies and in formulating recommendations for improvements of financial practices and achievement of financial stability in particular

economic, social, health, and related problems and international cultural and educational co-operation."[2]

As a result of President Truman's Point 4 proposal, the United Nations multiplied its own co-operative schemes for world development more than ten times. An expert body of international civil servants was set up to receive, sift, schedule, and act upon requests for aid from underdeveloped countries. Expenditures were forecast at $100,000,000 over a two-year period. For lack of organization and technicians, the initial expenditures will probably be considerably less than that amount.[3]

Co-operation between different UN agencies was already a commonplace in 1949. "The World Health Organization and the United Nations Educational, Scientific and Cultural Organization," reported the Secretary General, "have worked together in a fundamental educational programme of which health education was an important aspect. Field personnel of WHO and FAO are currently laying the basis for a joint project for malaria control and food production in South Asia. Personnel from WHO, FAO, the [International Monetary] Fund, and UNESCO have taken part in a comprehensive economic survey mission organized by the United Nations. The Bank and the Fund work closely together in making technical studies and in formulating recommendations for improvements of financial practices and achievement of financial stability in particular

[1] Article 55

[2] The comparatively small Point 4 budgets of the United States and the United Nations are misleading to the extent that they fail to reflect the much larger sums available for international investment through the World Bank and the Export Import Bank. Both have huge sums to loan where the risks are good.

The World Bank (International Bank for Reconstruction and Development) is owned by 48 sovereign countries. Basically, however, it is purely and simply a bank. Its purpose is to facilitate the investment of capital for productive purposes. Political considerations are ruled out as criteria for loans, and private capital is obtained by the floating of bond issues. The World Bank has an authorized capital stock of $10,000,000,000 with loanable reserves of $1,652,620,000, of which about $730,000,000 is available for loans in hard currency. Loans totaling $219,141,000 were made in 1949 for projects in Mexico, Brazil, Belgium, Finland, the Netherlands, India, Colombia, Yugoslavia and Ecuador.

The Export Import Bank is purely an agency of the United States Government. [illegible] it is making an increasing number of developmental loans, it was originally established to aid in financing trade with the rest of the world. Its authorized capital stock is $1,000,000,000, and its outstanding loans, credits, and guarantees may not exceed three and a half times that amount.

lack of good sense, not from lack of instrumentalities for avoiding them.

Sensibly handled, the world industrialization envisaged by Point 4 can provide the world with more health, more wealth, more stability, more happiness. In the past man has sometimes failed before lesser challenges; but with equal frequency he has risen to them. Today, when he has attained at last the god-like power to choose between his own destruction and his own salvation, there is good reason to hope that he will rise to the challenge again.

16

Machines and Money

THE TIME has come to summarize and round out what has been said here about the rise in living standards and real wealth which can accompany world industrialization.

Today the United States, with 7 per cent of the world's population, consumes half of the world's mechanical energy. Hal[f] of the conveniences of modern living have been dumped int[o] our 150,000,000 laps, leaving the other half to be eked ou[t] among more than 2,000,000,000 people. As noted previousl[y] your living standard, if you are an everyday American, is n[ot] only the highest in the world—it is nearly eight times as high [as] the average of the rest of mankind.

You command today many scores of times more mechani[cal] energy than your great-grandfather commanded a hundred ye[ars] ago Your grandson may well have at his fingertips the la[bor] of a thousand mechanical slaves—and get Thursdays and [Fri]days off to boot.

Small wonder that Charles E Wilson of General Motors quoted an economist as saying, "A hundred years from now [the] standard of living can be 16 times higher than it is today. [It] sounds like a lot, but if you break it down, you will find [that] it amounts to a little less than 3 per cent compound int[erest]

even minor changes continue to be met with unco-operative howls of 'socialism,' our system is apt to grow unhealthily rigid, which will mean that we have become unable to adjust ourselves to changing technologies and conditions."

Private enterprise in the past century gladly accepted 180,000,000 acres of public land for western railroads, and 200,000,000 acres which went for nothing or for little more than nothing to farmers, ranchers, and timbermen, and tariffs to protect American goods from foreign competition. Private enterprise in the present century has not been reluctant to accept subsidies for airlines, farming, shipping, and other socially useful works. Private barges are glad to use federally maintained inland waterways, and private trucks and buses are glad to travel along highways built with tax dollars.

Though for a long while industry denounced as socialistic such reforms as the income tax, or the eight-hour day, or abolition of child labor, in the end it accepted them—and was all the better for it. Today the American income tax alone amounts to as much as the total Russian income—and America remains a capitalist country.

There are circumstances under which government investment is a spur to private investment. Government is more likely than business to provide the money for transportation and communications, sanitation, roads, harbors. Social security and river valley authorities in the United States represent two shifts in the relationship between the government and its people which are still new enough to be denounced in some quarters as socialistic. Actually, they are part of what *Fortune* magazine calls "the indispensable framework for the release of private initiative." That framework is not the same today as it was a quarter of a century ago, or as it will be a quarter of a century from now. But its purpose remains unchanged.

The continuing capacity of private industry for accepting—and sometimes initiating—reform can be measured by a comparison of working conditions today with those of forty or even twenty years ago. Its capacity for breadth of vision has been